REPORT

OF THE

Indian Tariff Board

REGARDING THE

GRANT OF PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY

(including the evidence recorded during the enquiry)

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1938

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Report

on the

Magnesium Chloride Industry.

Terms of Reference.

1. The period of protection afforded to the Magnesium Chloride Industry under the Heavy Chemical Industry (Protection) Act, 1931, expires on the 31st March, 1939. The Government of India, in their Resolution No. 199-T. (1)/37, dated the 18th December, 1937, have referred to the Tariff Board the question whether any, and if so what, protective measures should be continued after 31st March, 1939, in the following terms:—

> " The protective duty on imported magnesium chloride under the Heavy Chemical Industry (Protection) Act, 1931, has effect only up to the 31st March, 1939, and the Government of India consider it necessary that an enquiry should be held by the Tariff Board in order to ascertain whether any, and if so, what protective measures should be continued beyond that date.
>
> 2. The Tariff Board is, therefore, requested to examine the above question. In making its recommendations the Board will take all relevant considerations into account including those stated in parts (*b*) and (*c*) of the Resolution adopted by the Legislative Assembly on the 16th February, 1923.
>
> 3. Firms and persons interested who desire that their views should be considered by the Tariff Board should address their representations to the Secretary to the Board."

This enquiry was taken up by the Tariff Board simultaneously with the enquiry into protection for the Paper industry. A press *communiqué* was issued in the terms of the Government of India Resolution and a questionnaire sent to the two companies manufacturing magnesium chloride, to the Textile Millowners' Associations of Bombay, Ahmedabad and Bengal and to Provincial Governments, Chambers of Commerce and other Associations and individual firms likely to be interested in the question.

Application for continuance of protection.

2. The sole applicant for protection is the Pioneer Magnesia Works, Limited. This Company, which was a private partnership concern in 1929, was registered as a private company in 1935 with an authorised capital of Rs. 7,00,000 and a paid up capital of Rs. 5,03,000. The only other Company which manufactures magnesium chloride failed to send any reply to our questionnaire or make any representation.

The two factories at which the Pioneer Magnesia Works Company manufactures magnesium chloride were inspected on March 5th and 7th, 1938, and evidence recorded in Bombay from representatives of the Company on March 17th.

The Textile Millowners' Associations, who are principally concerned with the use of magnesium chloride, in their written representations have given their general support to the continuance of protection to the industry on a reasonable level. Chambers of Commerce and other Associations have also supported the continuance of protection. A firm of importers who gave evidence during the enquiry of 1929 have on this occasion not thought fit to reply to our questionnaire. No opposition to the continuance of protection of the industry has, in fact, been raised from any quarter.

Previous enquiries.

3. The first enquiry into the magnesium chloride industry was held in 1924 on the application of the Pioneer Magnesia Works. The Tariff Board found that the first two conditions laid down by the Fiscal Commission for the grant of protection were fulfilled, but held that the industry would never be in a position to withstand foreign competition unaided and did not therefore qualify for protection. Subsequently, however, a reduction in the cost of production and the imposition of the 15 per cent. *ad valorem* revenue duty on imported Magnesium chloride enabled the Pioneer Magnesia Works to compete successfully with magnesium chloride imported from Germany and to double its output by 1927. By the removal of the 15 per cent. *ad velorem* revenue duty in September, 1927, and a reduction in the price of imported magnesium chloride created a position of great difficulty and led to a renewed application for protection. The Tariff Board, to whom the question was referred, submitted its report in June, 1929. It found that the magnesium chloride industry substantially satisfied the conditions for protection laid down by the Fiscal Commission and that it was as much in the interest of the consumer as of the manufacturer that the industry should be reasonably protected. It therefore recommended a specific protective duty of 7 annas a cwt., an amount approximately equal to 15 per cent. *ad valorem,* the general level of revenue duties then prevailing. This specific duty was raised to 8 annas 9 pies a cwt. as the result of the general surcharge of 25 per cent. imposed on all import duties under the Indian Finance (Supplementary and Extending) Act of 1931.

In 1933, the case of the Indian magnesium chloride industry came under examination along with certain other minor industries which had complained of unfair competition from Japanese imports as a result of the heavy depreciation in the currency of Japan. Representation were made by the Pioneer Magnesia Works as a result of which the specific duty of 8 annas 9 pies per cwt. on magnesium chloride was raised to Rs. 1-5 per cwt. or 25 per cent. *ad valorem* whichever is higher under the Indian Tariff (Amendment) Act of 1934.

Uses of magnesium chloride and derivative products.

4. Magnesium chloride may be described as a by-product of salt manufacture. The raw material is the residual mother liquor known as "bitterns" discharged from the salt beds after separation of the sodium chloride contained in brine or sea water in the form of crystallised salt. It is found in the ratio of about one ton of magnesium chloride to ten tons of salt. Two to two and a half tons of "bitterns" may be expected to produce one ton of magnesium chloride. Magnesium chloride is used in the sizing of yarn before it goes for weaving along with other substances. Being hygroscopic in character it has the effect of rendering the yarn pliable and soft. It is also used in the manufacture of oxy-chloride cement along with magnesite for the laying of jointless composition floors in buildings and railway wagons, as a stucco in building works, and to some extent in the grinding of machinery parts in rice mills.

Other products obtainable from the "bitterns" are magnesium sulphate or Epsom salts, magnesium oxide, magnesium carbonate, potassium chloride and bromine. At present only magnesium sulphate, used for finishing processes in textile mills and for pharmaceutical purposes, and magnesium carbonate, which is used as a filler in the Rubber industry, are produced on a commercial scale as adjuncts to the manufacture of magnesium chloride, but there are possibilities of the utilisation of other derivative products such as Bromine, a demand for which exists in the manufacture of explosives, magnesium oxide, which is used for insulation purposes, and potassium chloride, which can be used as a fertiliser or as a base for the production of other salts.

Magnesium Chloride factories.

5. Theoretically magnesium chloride can be produced wherever bitterns are available from the manufacture of salt. As the average quantity of salt manufactured in India is about 1½ million tons, the supply of bitterns is far in excess of any probable requirements. Magnesium chloride is produced at three places only, the Government salt factory at Kharaghoda and the State Salt Works at Kuda in Dhrangadhra State, both situated about 370 miles north of Bombay, on the edge of the Rann of Cutch, and the Okha Salt Works situated at Mithapur, seven miles from Okha port in the Gulf of Cutch. The manufacture of magnesium chloride at Kharaghoda and Okha Salt Works is in the hands of the Pioneer Magnesia Works, Limited. The works at Kuda in Dhrangadhra State are operated by another company, The Mayurdhwaj Swadeshi Magnesia Works. We understand that the process of manufacture is similar to that at Kharaghoda and that the production is about 1,000 tons per annum.

The processes of manufacture at the Kharaghoda factory and the Okha Salt Works are different. A brief description of the two processes is given in Appendix A. Manufacture at the Okha Salt Works will, we understand, shortly be taken over by a new company, which will work in conjunction with the Pioneer Magnesia Works Company.

The following Table shows the production of magnesium chloride since 1930 :—

Table I.

Production of magnesium chloride in India.

Year.	Kharaghoda Salt Works.	Okha Salt Works.	Kuda Salt Works.	Total.
	Tons.	Tons.	Tons.	Tons.
1930 . .	4,402	...	...	4,402
1931 . .	5,192	...	..	5,192
1932 . .	6,755	121	697	7,573
1933 . .	5,626	962	1,474	8,062
1934 . .	5,838	1,483	1,005	8,326
1935 . .	5,365	2,025	1,639	9,029
1936 . .	5,536	37*	1,009	6,583
1937 . .	6,932	2,206	1,011	10,149

The quantity of raw material, "Bitterns", available at the three factories is ample for their present requirements. The area of the salt pans at the Okha Salt Works is likely to be extended shortly and so provide an increased supply for additional production.

Cost of production at Kharaghoda factory.

6. At the time of the Tariff Board enquiry in 1929 the Pioneer Magnesia Works supplied estimates of the cost of production at its factory at Kharaghoda, the only factory then existing. On this occasion it has provided figures of costs for both Kharaghoda and the Okha Salt Works. In the following Table the cost of production as estimated by the Tariff Board of 1929 for an output of 3,000 tons is compared with the cost of production at the Kharaghoda factory as given by the Pioneer Magnesia Works Company for the year 1937 in which the output was 6,932 tons.

Table II.

	Estimated cost of production for an output of 3,000 tons in 1929.	Actual cost of production in 1937 as given by the Pioneer Magnesia Works Co. for an output of about 7,000 tons.
	Per cwt.	Per cwt.
	Rs. a. p.	Rs. a. p.
Raw material . . .	0 3 6	0 2 2·00
Power and fuel . . .	0 5 6	0 1 11·75

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* Reduction in output due to dismantling and re-organisation of the plant.

TABLE II—*contd.*

	Estimated cost of production for an output of 3,000 tons in 1929.			Actual cost of production in 1937 as given by the Pioneer Magnesia Works Co. for an output of about 7,000 tons.		
	Per cwt.			Per cwt.		
	Rs.	A.	P.	Rs.	A.	P.
Current repairs and maintenance	0	1	0	0	1	5·30
Labour	0	4	0	0	2	10·03
Supervision				0	0	10·00
Packing including cost of drums	0	10	6	0	7	9·24
Miscellaneous including royalties	0	0	10	0	0	8·37
Total works cost	1	9	4	1	1	8·69
Depreciation	0	2	0	0	1	1·75
Interest on working capital	0	2	5	0	1	0·32
Management	0	2	8	0	2	10·11
Directors' and Auditors' fees		...		0	0	1·00
Insurance		...		0	0	0·63
Rents, rates and taxes		...		0	0	0·76
Selling expenses	0	4	0	0	3	2·61
Miscellaneous		...		0	2	2·30
Total overhead charges	0	11	1	1	10	7·48
Total	2	4	5	1	12	4·17

In the following paragraph we make such comments as are necessary on the different cost items:—

(1) The cost of raw material has been reduced by over an anna owing mainly to the increased production. The "bitterns" are collected on a contract system and the cost does not seem susceptible of further reduction.

(2) The cost of power and fuel shows a substantial reduction of over 3 annas. Power is mainly derived from crude oil engines. Firewood required for boiling purposes is brought by rail from a distance of 150 miles at a cost of Rs. 12-4 to Rs. 13-4 per ton delivered at factory. Consumption of firewood is about 28 lbs. per cwt. of finished magnesium chloride.

(3) Current repairs and maintenance are higher by about 5 pies.

(4) The cost of labour and supervision taken together is lower by 4 pies owing mainly to increased production.

(5) The reduction of 2¾ annas in the cost of packing is due to a fall in the price of the metal sheets out of which the drums are made. Drums are made on contract, the

Company supplying the sheets and the simple plant required, which is located in an outbuilding of the factory. The cost of drums is an important item in the total cost of production and is mainly dependant on the price at which galvanised or ungalvanised sheet can be obtained. Supplies which were formerly imported from abroad are now obtainable in India. The Company has not found it possible to take back the drums after they have been emptied as they are damaged to such an extent in opening as not to be worth the cost of transport.

(6) Miscellaneous charges including royalty payable to the Government remain almost the same.

The total reduction in the works cost amounts to 8 annas 1 pie a cwt. which indicates satisfactory progress in the efficiency of manufacture.

Overhead charges are not comparable in all respects, because in 1929 the Pioneer Magnesia Works was a private partnership concern and has now been converted into a private registered company with a balance sheet prepared on a different basis.

(1) Depreciation has been calculated at the rates allowable for Income-tax purposes. The Company's contention is that the statutory allowance for depreciation is insufficient as the corrosive action of the chemical substances on the plant shortens the period of replacement. The Company claims that the correct rate of depreciation should be 25 per cent. We cannot accept this contention in full, but we recognise that there is some force in the contention that statutory rates of depreciation are insufficient in the peculiar circumstances under which it operates. From personal inspection we are satisfied that it is reasonable to allow *depreciation at the rate of 10 per cent.* on the replacement value of the plant. The block value of a factory of 5,000-6,000 tons capacity is calculated by the Company to be Rs. 3,00,000. The estimate appears to be reasonable in view of the fact that the block value of the plant at the Okha Salt Works erected mainly in 1936 is Rs. 2,78,000 for a factory of smaller capacity.

(2) Interest on working capital at 5 per cent. on average stocks of Rs. 2 lakhs would amount to 1 anna 4 pies. The allowance claimed on this account of 1 anna 0·32 pie is reasonable.

(3) Management expenses include 5 per cent. commission on gross profits *plus* Rs. 250 per mensem to the Managing Director and actual office expenses.

(4) Directors' and Auditors' fees, insurance, and rents, rates and taxes call for no remarks.

(5) Selling expenses are calculated on the basis of 5 per cent. commission on sales and are slightly lower than the 1929 estimate.

(6) Miscellaneous includes what the Company describe as quota adjustment payments. A working arrangement has been made with

the Mayurdhwaj Swadeshi Magnesia Works, the company which manufactures magnesium chloride at Kuda, under which each Company sells in a different area and if the sales of either company exceeds a fixed quota, a proportionate payment is made by one company to the other. Under this arrangement the Pioneer Magnesia Works Company made a payment of Rs. 9,766 to the other Company in 1937. A private arrangement of this kind to reduce competition and so maintain prices at an agreed level is not one which we can recognise in calculating the allowable amount of overhead charges. Excluding the amount of Rs. 9,766, other miscellaneous charges will amount to 1 anna 1 pie per cwt.

A point for consideration is whether any deduction should be made from the cost of production on account of the other derivative products made from bitterns simultaneously with the production of magnesium chloride, a description of which is given in Appendix B. The quantity of magnesium sulphate and magnesium carbonate likely to be produced at the Kharaghoda factory is 400 tons. These products are not strictly by-products of magnesium chloride but derivative products which are obtained during the process of manufacture from the same raw material, the "bitterns" remaining over after the extraction of salt. The works costs are stated to have been kept generally separate from the works costs of magnesium chloride, but some of the overhead charges are common to both. A deduction should, therefore, be made from the overhead charges of magnesium chloride manufacture proportionately to the extent to which magnesium sulphate and magnesium carbonate have been produced. This deduction we calculate to be 7·3 pies per cwt. If the production of magnesium sulphate and magnesium carbonate is increased and other products such as magnesium oxide are worked on a commercial scale which would enable them to be marketed, a further reduction in the incidence of the overhead charges of magnesium chloride manufacture should result; but. since the possible saving is problematic, we do not consider it necessary to take it into account for our present purpose. Making adjustments as above the cost of manufacture may be estimated as follows:—

TABLE III.

Works cost based on the figures complied by the Pioneer Magnesia Works for 1937 for Kharaghoda factory.

	Per cwt.		
	Rs.	A.	P.
(1) Works cost	1	1	8·69
(2) Overheads—			
Depreciation (10 per cent. on Rs. 3,00,000 having 6,000 tons capacity) . . .	0	4	0·00
Interest on working capital (on our calculation at 5 per cent. on Rs. 2 lakhs) . .	0	1	4·0

TABLE III—*contd.*

	Per cwt.		
	Rs.	A.	P.
(2) Overheads—*contd.*			
Management	0	2	10·11
Directors' and Auditors' fees	0	0	1·00
Insurance	0	0	0·63
Rent, rates and taxes	0	0	0·76
Selling expenses	0	3	2·61
Miscellaneous	0	1	1
Total	1	14	4·2
Deduct—7·3 pies per cwt. debitable to derivative products	0	0	7·3
	1	13	8·9

Cost of production at Okha Salt Works.

7. The Pioneer Magnesia Works Company has also supplied us with figures of the cost of production at the Okha Salt Works in 1937. The following statement compares the works costs at the two factories:—

TABLE IV.

Works Costs 1937.

	Kharaghoda Salt Works.			Okha Salt Works.		
	Rs.	A.	P.	Rs.	A.	P.
Raw material	0	2	2	0	4	0
Power and fuel	0	1	11·75	0	5	9·9
Current repairs and maintenance	0	1	5·30	0	1	9
Labour	0	2	10·03	0	3	4
Supervision	0	0	10·0	0	2	9
Packing including cost of drums	0	7	9·24	0	7	9·4
Miscellaneous (including royalties)	0	0	8·37	0	0	0·7
	1	1	8·69	1	9	6
		or				
	1	1	9			

It will be observed that the present cost of production at the Okha Salt Works is considerably above the Kharaghoda figures mainly because the cost of raw material and power and fuel are higher. The high figures for raw materials, labour and supervision are attributable to the comparatively small production. As regards power and fuel, coal has to be imported by sea and costs Rs. 21 to Rs. 25 per ton against Rs. 12-4-0 to Rs. 13-4-0 per ton, the cost of firewood delivered at the Kharaghoda factory. Though the consumption of coal per cwt. of finished magnesium chloride is estimated at 26 lbs. against 28 lbs. of firewood at Kharaghoda, the difference in the cost of coal as compared with the cost of firewood is so large as to increase the net cost.

No useful comparison of overhead charges can be made since some of the charges are common to the two factories and no allocation of charges has been attempted for such items as interest on working capital, management and Directors' and Auditors' fees. If this allocation were made, the cost figures of management included in the Kharaghoda factory estimate would have been slightly reduced if we had taken the same unit of production, but as the Okha Salt Works factory will shortly pass under the management of new company we do not consider it necessary to make any alteration in the estimated figures for the purpose of calculating future works costs at the Kharaghoda factory.

Export of Magnesium Chloride.

8. At this point it will be convenient to consider the effect of export trade which the Company has been able to develop in recent years on the price at which it is able to sell internally.

The following Table shows the quantity in tons of magnesium chloride which the Company has exported and the average price realised per ton in each year from 1931 to 1937:—

TABLE V.

Year.	Quantity.	Average price realisation c.i.f. per ton.
	Tons.	£ s. d.
1931	893	4 10 11
1932	2,254	4 14 7
1933	1,857	4 8 4
1934	2,205	4 11 2
1935	2,270	4 8 3
1936	1,775	4 7 8
1937	2,198	4 5 10

The bulk of the exports are to the United Kingdom where magnesium chloride is admitted free of duty while foreign magnesium chloride pays a duty of £1 per ton or 25 per cent. *ad valorem,* unless imported for use in shipyards. Exports to the United Kingdom in 1937 amounted to 1,406 tons and the average realised price to £4-8-1 per ton. Exports to other countries have been mainly to Holland. The quantity in 1937 was 619 tons and the average realised price £3-17-11 per ton. Indian magnesium chloride has been exported in small quantities to other European countries including Denmark and Czechoslovakia and to Australia, Canada and South Africa.

The Company claims that the prices realised leave little margin of profit, but that production for export reduces the incidence of overhead charges. It does not expect any expansion of its export business under present conditions. The quantity exported has fluctuated from year to year and was slightly lower in 1937 than in 1932. As all magnesium chloride from wherever imported is admitted free of duty into ship-building yards, the preference enjoyed in the United Kingdom is limited. In other countries quotas, exchange restrictions and barter arrangements hamper the development of trade. If the amount of exports were reduced, an eventuality which seems quite possible in view of increasing competition, the total production in Indian factories would decrease and the incidence of overhead charges would be slightly raised.

Quality of Indian magnesium chloride.

9. We have next to consider whether any allowance should be made for difference in quality between the Indian product and the foreign product with which it competes. In 1929, Indian magnesium chloride was greyish in colour and for this reason was regarded as inferior to the whiter imported article and commanded a lower price, estimated by the Tariff Board to average 7 annas a cwt. The position is now changed. Improvements in the processes of manufacture have enabled the Pioneer Magnesia Works Company to produce magnesium chloride which is claimed to be equal in colour and in all other respects to the imported article. This claim to improvement is justified by the fact that the Company is able to compete on equal terms with the German or French magnesium chloride in countries to which Germany and France export such as Holland and Czechoslovakia, leaving out of account the United Kingdom, where the Indian product enjoys a measure of preference. Since the Pioneer Magnesia Works Company themselves claim that their product is as good in quality as the foreign product, the question of difference in quality no longer arises.

10. We have considered the question of what further reductions are possible in the cost of production.

Future costs.

The introduction of mechanical labour saving devices at the Kharaghoda factory might lead to some slight economy in works costs, but we doubt if the saving would be appreciable. An increase in production would reduce the incidence of overhead charges, but we do not consider that it would be safe to assume any reduction in costs on this account in the near future as the demand for magnesium chloride is limited.

At the Okha Salt Works the new Company about to be formed should be able to reduce the cost of manufacture with an increase in production to the designed capacity of 2,500 tons. The works cost of production in 1937, the first year after the reorganisation of the plant, is admittedly higher than it should be and the management are confident that it can be reduced substantially and eventually brought to the level of the Kharaghoda factory.

Fair selling price.

11. Though for the purpose of calculating the cost of production we have taken the figures of the Kharaghoda factory as our basis, we have to take into account the fact that the Kharaghoda factory is no longer the only factory manufacturing magnesium chloride as was the case

in 1929. Two other factories now manufacture magnesium chloride. The Okha Salt Works is at present under the management of the Pioneer Magnesia Works Company, but will shortly be constituted into a separate company. The Mayurdhwaj Swadeshi Magnesia Works is an independent concern, and there is no reason why similar small factories should not come into existence.

In calculating the rate of profit that should be added to the cost of production to arrive at the fair selling price, the Tariff Board of 1929 took 10 per cent. on the replacement value of the Kharaghoda factory. As the industry is seasonal and factories can operate only for part of the year and the scale of production is comparatively small, it is reasonable to allow a fairly high margin of profit. In present conditions we consider that 8 per cent. is a fair rate. This will amount to 3 annas 2·4 pies per cwt. on a replacement value of Rs. 3,00,000.

For the purpose of estimating the amount of protective duty required, following the procedure adopted by the Tariff Board of 1929, we propose to compare the fair selling price of magnesium chloride delivered at mill, Bombay with the price of imported magnesium chloride delivered at mill, Bombay for reasons which we shall explain in a later section. Freight from the Kharaghoda factory to Bombay is annas 7·5 per cwt. For landing charges and cost of transport to mills in Bombay the Company has claimed 5 annas a cwt. These charges seem high. We propose to allow 4 annas a cwt., the amount allowed in 1929. The following table shows the fair selling price mill delivery, Bombay, as estimated by us:—

TABLE VI.

	Rs.	A.	P.
Cost of production	1	13	8·9
Profit	0	3	2·4
Fair selling price *ex*-factory	2	0	11·1
Freight to Bombay	0	7	5
Handling and transport charges to mill in Bombay	0	4	0
	2	12	4·1
		or	
	2	12	0

Market for Magnesium Chloride.

12. The following Table shows internal production, imports and exports in each year from 1929-30.

TABLE VII.

Consumption of Magnesium Chloride.

Year.	Production.	Imports.*	Total.	Exports.*	Net consumption.
	Tons.	Tons.	Tons.	Tons.	Tons.
1930 . .	4,402	1,778	6,180	...	6,180
1931 . .	5,192	1,827	7,019	...	7,019
1932 . .	7,876	1,134	9,010	...	9,010
1933 . .	7,588	1,147	8,735	829	7,906
1934 . .	8,321	773	9,094	1,792	7,302
1935 . .	8,390	746	9,136	2,104	7,032
1936 . .	6,573	814	7,387	1,559	5,828
1937 . .	11,138	899	12,037	2,380	9,657

Consumption has fluctuated, but has not increased appreciably except in 1937. It will be observed that since 1934 internal production has exceeded the total estimated consumption owing to the development of the export trade.

The main demand for magnesium chloride is from the Textile industry for use in the sizing of yarn, to a less extent for admixture in oxy-chloride cement for flooring purposes and to a very small extent in the grinding of machinery parts in rice mills. In 1934 the Government of Bombay took up the question of the utilisation of magnesium chloride for the sizing of yarn in the handloom industry. Experiments conducted by the Department of Industries have shown that an admixture of magnesium chloride with other materials renders the warp yarn of 20 counts less liable to break in the process of weaving, and that its use is more economical than the sizing mixture at present employed. A bulletin on the subject has been issued, but so far there has been no demand for the two size-mixing recipes advocated. A good deal of propaganda will be necessary to induce weavers, who are usually conservative in their outlook, to adopt the recipes. It will also be necessary for the magnesium chloride companies to sell their product in small containers suitable to the requirements of a cottage industry. This, we understand, they are prepared to do if a demand should grow up, but the difficulty remains that when once the containers are opened, the material must be used at once as otherwise it deteriorates. The demand for magnesium chloride is not, in our opinion, likely to expand except gradually. We are informed that a possible new use for it has been found as an admixture in fireproof paint, experiments on which are being conducted at the Forest Research Institute, Dehra Dun.

Foreign competition.

13. At the time when protection was first granted to the industry the only competitor was Germany. In 1933-34 imports from Japan began at much lower prices. The quantity imported in that year was 155 tons but fell in the following years. In 1937-38, owing to war conditions, imports from Japan were negligible. In 1936-37 a small

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* The above figures of exports and imports have been supplied by the Director General of Commercial Intelligence and they do not represent the same period which has been calculated by the Company.

consignment from Palestine was received in India to test the market. In 1937-38 magnesium chloride from France was imported for the first time. The position at present is, that Germany remains the chief competitor, but the industry is faced with possibility of competition from three other sources, of which Japan is considered the most serious, because the cost of production and freight to India are believed to be lower. Imports from Japan have recently decreased owing to disturbed conditions in the Far East, but may be expected to revive when conditions return to normal.

The following Table shows the c.i.f. prices of imported magnesium chloride:—

TABLE VIII.

C.i.f. prices of imported magnesium chloride.

		Per cwt.		
		Rs.	A.	P.
November, 1931	German	2	10	9
May, 1932	German	3	0	5
September, 1933	Japanese	1	9	4
August, 1934	German	3	0	1
February, 1935	Japanese	1	8	0
June, 1936	Japanese	1	14	0
June, 1937	German	3	0	0

There is a wide divergence between the price of magnesium chloride imported from Germany and the Japanese product. For the purpose of determining the measure of protection required we must take into account the lowest price *ex*-duty at which imported magnesium chloride has been landed or is likely to be landed. The lowest c.i.f. price as given by the Collector of Customs, Bombay, is Rs. 1-8-0 per cwt. Landing charges, clearing, forwarding and delivery charges to mills in Bombay may be estimated at 5 annas a cwt. Adding duty at Rs. 1-5-0 per cwt. the price per cwt. delivered at mill, Bombay, may be estimated at Rs. 3-2-0 per cwt. We are informed that Japanese magnesium chloride was at one time in 1933 quoted as low as Rs. 2-9-0. More recent selling prices have not been below Rs. 3-2-6 per cwt.

The two main markets for Indian magnesium chloride are Bombay and Ahmedabad. The actual realised prices of magnesium chloride mill delivery in Bombay were Rs. 4-3-0 in 1934 and 1935 and Rs. 4-4-0 in 1936-37. It has been possible to maintain average prices at this level, because the quantities of magnesium chloride imported from Japan have been relatively small in comparison with other imports, mainly from Germany, which have been sold at higher prices.

As regards the Ahmedabad market, the Tariff Board of 1929 noted that the Indian product enjoyed a freight advantage which, however, it did not consider it necessary to take into account for the reasons given in paragraph 13 of its report. Since then the position has been altered owing to the facility of importing magnesium chloride through Kathiawar ports. During 1936 and 1937 the price realised by the Company was the same as in Bombay, though in previous years it was generally 1 to 2 annas a cwt. higher. We think, therefore, that we may leave out of account any question of freight advantage or disadvantage and base our calculations of the amount of protection required on the prices of Indian and imported magnesium chloride delivered at mill Bombay.

Measure of protection required.

14. We find that the fair selling price of Indian magnesium chloride delivered at mill Bombay is Rs. 2-12-0 per cwt. The lowest import price at which foreign magnesium chloride can be delivered at mill is Rs. 1-13-0 per cwt. without duty. The measure of protection required for the industry is thus 15 annas per cwt., a reduction of 6 annas a cwt. below present rate of the protective duty.

Burden on the consumer.

15. The Tariff Board of 1929 held that the imposition of a protective duty sufficient to meet the needs of the industry imposed practically no burden on the consumer. In the textile industry, the principal consumer, the percentage of cost of magnesium chloride per piece of cloth was calculated to be no more than ·0703 of a pie. The Bombay Millowners' Association has pointed out that the price of magnesium chloride has been increased by 25 per cent. since 1929, but even at present prices the incidence of cost amounts to no more than a small fraction of a pie. This Association and other Textile Millowners' Associations have raised no objection to the continuance of protection to the industry and have, in fact, supported the claims put forward by the Pioneer Magnesia Works Company. Nor has any objection been raised by companies using magnesium chloride as an admixture in cement used in flooring.

We agree with the Tariff Board of 1929 that a reasonable amount of protection to the industry is in the interest of the consumer. Were protection to be entirely withdrawn, the danger would arise of the dumping of magnesium chloride from Japan, or of a combination of continental producers to lower prices so as to kill the Indian industry. If the Indian industry were to succumb to foreign competition, foreign producers would be in a position to raise prices considerably above the level prevailing in recent years.

Possibility that protection may ultimately be dispensed with.

16. There remains the question as to whether the industry will ultimately be in a position to function without the assistance of protection. The Pioneer Magnesia Works Company has shown a progressive reduction in the cost of production at its main factory. It has also shown considerable enterprise in developing an export trade to the United Kingdom and other countries. Further reduction in the costs are dependent mainly on the extent to which the quantity of production can be increased,

and this is dependent on the extent of the demand, which is limited. If, however, the Company is able to develop a market for other derivative products, it should be in a position to reduce the incidence of overhead charges on the cost of manufacture of magnesium chloride. We consider that there is a reasonable prospect that the industry may ultimately be able to stand without the aid of protection provided measures are taken to prevent unfair competition from foreign countries by the dumping of magnesium chloride at unremunerative prices.

Conclusion.

17. We find that the magnesium chloride industry substantially satisfies the conditions laid down by the Fiscal Commission and that it is as much in the interest of the consumer as of the manufacturer that the industry should be reasonably protected. We recommend that protection to the industry should be extended for a further period of seven years, but that the specific amount of duty should be reduced from Rs. 1-5-0 a cwt. to 15 annas per cwt. Should, however, any attempt be made to import magnesium chloride at a price below Rs. 1-8-0 per cwt. c.i.f. Bombay, which would, in our opinion, amount to dumping at an unremunerative price, we recommend that action should be taken under section 4 (1) of Act No. XXXII of 1934 to prevent the protective duty being ineffective.

If protection is to be continued for the industry we consider that the Pioneer Magnesia Works Company, which is at present a private company, should convert itself into a public liability company.

No question of the Indianisation of the industry arises because both the management and the staff are and always have been entirely Indian.

G. T. H. BRACKEN,
President.

F. I. RAHIMTOOLA,
Member.

H. C. SEN,
Secretary.

BOMBAY,
7th May, 1938.

APPENDIX A.

Note on the Process of manufacture of magnesium chloride.

The process of manufacture of magnesium chloride, which may be considered a by-product of salt, at the Kharaghoda factory is comparatively simple. Described in non-technical language it is briefly as follows: The basic raw material used is known as "Bitterns" which is the floating mother liquor left in pans used for the manufacture of salt after crystallisation. The brine used in the manufacture of salt, which has an initial density of 15 Béume, is drawn by means of hand worked picotas from wells about 20 feet deep and run into shallow open pans when natural evaporation by the sun takes place. When the salt has been crystallised it is removed from the pans and is ready for transport to the depôt at Kharaghoda Railway Station. With the manufacture of salt the Pioneer Magnesia Works Company has no direct connection. Its interest is in the liquor remaining over after the salt has been removed which contains magnesium chloride and magnesium sulphate but comparatively little magnesium bromide or potassium chloride which are found in natural sea water. This liquor is removed in tins and carried by men and women workers under a contract system to cisterns fixed on railway trucks which when full are pushed by manual labour to the factory. At the factory the liquor is transferred from the containers into ponds of which there are four capable of holding quantities sufficient to make about 1,500 tons of magnesium chloride or other products. After a period of some 8 days' evaporation in the sun the liquor is transferred into overhead tanks from which it is run into a series of preheating pans where the temperature is gradually raised by the use of waste steam until it reaches the final pan where it is boiled under a furnace to a temperature of 162° Centigrade. When sufficient condensation has been obtained by the process of boiling, the resulting white waxy substance is run off into settling vessels before final filling into drums made of zinc coated galvanised sheets, where it gradually solidifies into a hard block. When filled to capacity the drums are sealed and then ready for marketing in the solid "fused" form.

After the magnesium chloride is run off into the drums there remains behind a quantity of "sludge" which is again reduced to the liquid form by the admixture of fresh water. The liquor thus formed is run off into troughs and allowed to stand for four days when crystallisation takes place to form soluble magnesium sulphate ("Epsom salts") which is sold as a derivative product.

The liquor remaining over which still contains a proportion of magnesium chloride is drained back into the original ponds where it is used again for the manufacture of magnesium chloride. None of the original "bitterns" is, therefore, lost except in the process of evaporation or condensation.

The demand for magnesium chloride is mainly in the solid "fused" form, but some quantity is also required in the crystal form which is manufactured in a slightly different manner. The boiling of the mother liquor is done to a lower degree centigrade. The crystallised magnesium chloride is then removed and centrifuged, and is ready for packing in drums.

The mother liquor or "bitterns" is also used for the manufacture of another chemical, magnesium carbonate. The liquor is run from the overhead tank into containers where it is mixed with soda ash. It is then run into small troughs and allowed to stand for days for crystallisation to take place. The crystallised material is then removed, centrifuged and dried in a rotary drum and is ready for sale. The Company has from time to time considered the use of labour saving plant for the collection and handling of bitterns but has not found it economical to do so. The labour employed in the working season averages about 50 and in the off season about 20 excluding the labour employed in the collection of bitterns, which is done on contract with a labour force of about 400 during the busy season. The drums into which the magnesium chloride is packed are made on contract on the premises, the Company supplying the galvanised sheets and the simple plant necessary.

2. The process of manufacture of magnesium chloride at the Okha Salt Works Company's factory situated at Mithapur is different and more elaborate because sea water is the primary material used which contains an admixture of sodium chloride, magnesium chloride, magnesium sulphate, magnesium bromide and potassium chloride and various impurities from which the brine used at the Kharaghoda factory is comparatively free, since it has undergone a considerable amount of natural purification in the process of filtration through sand and clay and at the initial stage of pumping from the brine wells has a density of 15° Bé. against the natural density of 2·25° Bé. of sea water. The required quantities of sea water are obtained by means of a marine dam fitted with sluices and automatic gates operated by the action of the incoming and outgoing tides. The sea water enters at a density of 2·25° Bé. and passes by gravity successively through two marine lakes each over a mile long and large reservoir. From the reservoir the concentrated sea water is led into preliminary condensors, and after passing a distance of over two miles enters the high density condensors at 10° Bé. The brine is kept moving in a zig-zag course and when it reaches a density of nearly 24° Bé. is led into a long channel from which it is distributed to the crystallising pans where the salt is precipitated at a density of 28° Bé. The total distance over which the sea water travels for the purposes of evaporation is 7 miles. The salt pans are so laid out as to collect by gravity the mother liquor or "bitterns" from the salt pans at a central pumping station from which it is pumped to the factory.

The chemical constitution of the bitterns thus obtained is different from that of the bitterns obtained at Kharaghoda. Instead of first separating the magnesium chloride and then removing the magnesium sulphate, the process is reversed. The necessary crystallisation is obtained by means of a refrigerator plant at a low temperature. The magnesium sulphate thus obtained is centrifuged, reduced again to liquid form and after re-crystallisation a second time centrifuged, thus obtaining a final product of a high degree of purity. The liquor remaining over after crystallisation is next treated for the removal of potassium chloride which is at present a waste product, but may ultimately be utilised as an artificial manure. After the elimination of magnesium sulphate and potassium chloride, the liquor is ready for the manufacture of magnesium chloride. The liquor is passed through two preheating pans or kettles for which waste heat is used, into a final four ton boiling kettle constructed of special steel and the temperature raised to 161° Centigrade. In the process of boiling small quantities of chemicals are added for the separation of impurities in the form of mixed salt containing kieserite and potassium chloride. When ready the liquor is drawn off and passed to a spherical container. At this stage it is bright saffron in colour. After bleaching and a short period of stirring by a mechanical stirrer magnesium chloride emerges in its final white waxy form with a purity of 99 per cent. It is then run off into drums and is ready for the market in the solid fused form.

Magnesium chloride is not manufactured at the Okha Salt Works in the crystal form. Plant has, however, been recently obtained for the manufacture in "flake" form for which there is a demand. Another product which is possible to obtain from the mother liquor is bromine which is used in the manufacture of explosive and other industries. The bromine content at present disappears in the form of vapour during the process of boiling and its noxious smell is a definite nuisance, if not a danger to health. The question of its utilisation as a by-product is under consideration. This would, at least, have the advantage of doing away with the noxious fumes.

The quantity of bitterns discharged from the salt works being in excess of the requirements of the Magnesium Chloride Plant, provision has been made for the installation of plant for the production of magnesium oxide.

APPENDIX B.

Note on the products obtainable from "Bitterns".

Apart from magnesium chloride the following products are obtainable from the "bitterns", the residual mother liquor discharged from salt pans after the separation of sodium chloride contained in brine or sea water:—

(1) Magnesium Sulphate or Epsom Salt ($MgSO_4—7H_2O$). This is used for the finishing processes in textile mills and also for pharmaceutical purposes. It is now manufactured in a quality of 98 per cent. purity to an amount of about 750 tons in the two factories taken together. The plant installed at the Okha Salt Works is based on a productive capacity of over 2,500 tons per annum and it is expected to come up to that quantity in the course of 1938-39. Magnesium Sulphate is packed in bags and sold at a price of about Rs. 3-8 per cwt. in Bombay.

(2) Magnesium Carbonate ($MgCO_3$). This is used as a filler in the Rubber Industry and also in making 85 per cent. magnesia for lagging of boilers. It is manufactured at the Kharaghoda factory to the extent of 100 tons per annum and sold in Bombay at a price of about Rs. 16 per cwt.

(3) Magnesium Oxide (MgO). This is used as an insulation material. It has not yet been manufactured in India but a plant for its manufacture is being obtained in the Okha Salt Works factory. Caustic lime of a high degree of purity is necessary in its preparation and this is available at site. Calcium chloride results as a by-product in the preparation of the product. The English price of Magnesium Oxide is £67-10 per ton.

(4) Potassium Chloride (KOl). It is used as a fertiliser and in the preparation of potassium compounds such as Potassium Nitrate and Potassium Sulphate. In the Okha Salt Works factory it is already separated in the process of manufacture of Magnesium Chloride, but the product has not yet been marketed. The commonest quality of Potassium Chloride is 80 per cent. pure Potassium Chloride. The price is £8 a ton.

(5) Bromine (Br) can be recovered at an intermediate stage between magnesium sulphate and potassium chloride. Bromine is used in the manufacture of explosives and in the preparation of pharmaceuticals, dye-stuffs and photographic material.

Evidence.

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सत्यमेव जयते

DEPARTMENT OF COMMERCE.

RESOLUTION.

TARIFFS.

New Delhi, the 18th December, 1937.

No. 199-T. (1)/37.—The protective duty imposed on imported magnesium chloride under the Heavy Chemical Industry (Protection) Act, 1931, has effect only up to the 31st March, 1939, and the Government of India consider it necessary that an enquiry should be held by the Tariff Board in order to ascertain whether any and if so, what protective measures should be continued beyond that date.

2. The Tariff Board is therefore requested to examine the above question. In making its recommendations the Board will take all relevant considerations into account including those stated in parts (*b*) and (*c*) of the Resolution adopted by the Legislative Assembly on the 16th February, 1923.

3. Firms and persons interested who desire that their views should be considered by the Tariff Board should address their representations to the Secretary to the Board.

ORDER:—Ordered that a copy of the above Resolution be communicated to all Provincial Governments, Chief Commissioners and the Political Officers, all Departments of the Government of India (except the Home and External Affairs Departments), the Director-General of Commercial Intelligence and Statistics, the Central Board of Revenue, the Indian Trade Commissioners, London, Hamburg, Milan and Osaka, the Secretary, Tariff Board, the High Commissioner for India, London, His Majesty's Trade Commissioner in India, the Canadian Trade Commissioner in India, all the Chambers of Commerce and Associations, the French Trade Commissioner in India, Burma and Ceylon, the Secretary, Imperial Council of Agricultural Research and the Chief Controller of Stores.

Ordered that a copy be communicated also to the Government of Burma.

Ordered also, that it be published in the *Gazette of India*.

Press Communiqué, issued by the Tariff Board on the 29th December, 1937.

The Government of India, Department of Commerce, in their Resolution No. 199-T. (1)/37, dated the 18th December, 1937, hade referred to the Tariff Board the question whether any and, if so, what protective measures should be continued beyond the 31st March, 1939, on which date the protective duty imposed on imported Magnesium Chloride under the Heavy Chemical Industry (Protection) Act, 1931, will expire.

2. Firms or persons interested who desire that their views should be considered by the Board should address their representations (with four spare copies) to the Secretary to the Board at No. 1, Council House Street, Calcutta, not later than the 31st January, 1938.

सत्यमेव जयते

Questionnaire issued by the Tariff Board.

Introductory.

1. When was your firm established? Is it a public or private registered Company, or is it an unregistered firm?

2. To what extent is the capital invested in your firm held by Indians? How many Directors are there, and how many of them are Indians? How many Indians are employed in the superior management?

3. Please enumerate the various products and by-products you manufacture.

4. When did your works commence to manufacture?

5. Please state the quantity of each different product and by-product which your works as at present equipped could manufacture per annum if working to capacity.

6. What was the actual output of each different product and by-product from 1929-30?

7. (*a*) Do you consider that your products are equal in quality and appearance to imported products?

(*b*) Do they command the same price in competitive markets as imported products?

(*c*) If not, to what cause do you ascribe the lower price of the Indian product?

(*d*) Apart from the question of quality, is there any prejudice against your products, either generally, or in particular markets or on the part of a particular class of consumers?

8. (*a*) What are the principal industries in which your products are used?

(*b*) For what purposes are these products used?

9. Please state what has been the length of your working season for each year from 1929-30.

10. What process do you use for the manufacture of each of your products?

N.B.—When the process is known by a special name, no description of the process need be given. The name only of process should be stated.

Raw Materials.

11. What are the principal raw materials used in the manufacture of each of your products?

12. What would be your annual requirements of raw materials if your plant were working to its full capacity?

13. What quantity of each raw material is required for the production of one unit of each of your products?

N.B.—The customary unit should be stated.

14. What are the main sources of supply for each of your raw materials?

Labour.

15. Do you employ any labour other than Indian labour? If so, please give particulars.

16. (*a*) What is the total number of Indian workmen employed?

(*b*) What are the average rates of wages of the different classes?

17. Please give total wages bill for Indian labour at the works for the past eight years; any increase in the rates of wages should be noted with the date upon which it was given.

18. (*a*) Is the Indian labour force sufficient?

(*b*) Is it drawn from the vicinity of the factory or from other parts of India?

19. What arrangements have you made for housing your labour and for promoting its welfare in other directions such as water-supply, education, medical attendance and recreation?

Power including fuel.

20. (*a*) What is the nature of the power used in the factory?

(*b*) If steam, what is the fuel used and is it available locally in sufficient quantities?

21. What is the total quantity of fuel consumed per unit of output, whether for power production or for other purposes?

22. What is the price per ton of fuel—

(*a*) at source of supply,
(*b*) at works?

Market.

23. What is the total Indian production so far as it can be estimated of each of your products for the past eight years?

24. What do you estimate is the total Indian demand for each of these products?

25. Do you think that the demand will substantially increase in the near future? If so, please give the reasons.

26. Where are your principal markets in India and how far are they from your works?

27. Which of your products is exported? Please give a statement for the past eight years showing the countries to which your products are exported, the quantity and the price.

28. To what extent is it possible to develop the export market of your products?

29. (*a*) Are any of your products purchased by Government or other public bodies or departments?

(*b*) If so, please state the extent of their purchases and the prices paid during the past 8 years.

Foreign competition.

30. Which foreign countries are your keenest competitors in the Indian market?

31. Have conditions in India led you to adopt processes of manufacture different from those practised in the chief competing countries? If so, has the foreign manufacturer an advantage in this respect?

32. Please state (1) the prices at which imported products have been landed in India under the following heads:—

(*a*) f.o.b. price,
(*b*) freight,
(*c*) insurance and trade charges,
(*d*) customs duty,
(*e*) landing charges,

> [*N.B.*—If information regarding (*a*), (*b*) and (*c*) is not available, the c.i.f. price should be given.]

and (2) the prices realised by you each year during the past eight years.

33. (*a*) Are there any Trusts or Combines operating in the products you manufacture in India or in foreign markets?

(*b*) If so, please give any information available.

(*c*) To what extent have their operations affected you?

34. Have you any reason to suppose that the prices at which foreign producers sell for export to India are unremunerative, *i.e.*, below the cost of production or leave only a small margin of profit to the producer? If so, please state fully your reasons and the evidence on which you rely.

35. Please compare the freight which you have to pay to reach your main markets in India with the total freights, sea and rail, payable on imports to the same markets.

Internal competition.

36. (*a*) Is there any serious competition among Indian manufacturers in respect of products you manufacture?

(*b*) If so, who are your principal competitors and in respect of which of your products?

37. Has any attempt been made by Indian manufacturers to eliminate competition by mutual agreement regarding manufacture or by the formation of a joint sales organisation or otherwise?

Equipment.

38. (*a*) Do you consider that your works are sufficiently large as an economic unit of production to ensure economy?

(*b*) What, in your opinion, is the smallest unit of production which can be operated economically under present-day conditions?

39. Have you adopted any new processes of manufacture or have you installed new plant and machinery in replacement of, or in addition to, your original plant? If so, give a brief description of the process or plant and state whether the results have fulfilled your expectations.

40. Do you contemplate any further development of manufacture? If so, please give a brief description and an estimate of the cast.

Capital account.

41. What is the block value of your property as it stood in your books at the end of the last complete year for which figures are available, under the following heads:—

(*a*) leases and concessions,
(*b*) lands,
(*c*) buildings,
(*d*) plant and machinery,
(*e*) other miscellaneous assets?

42. What do you estimate would be the present-day cost under the heads (*a*) buildings, and (*b*) plant and machinery, of erecting a works having the same output as your present works? How does the figure compare with the block value of your present works under the same heads, and would the operating cost of a new works established now be greater or smaller than yours?

43. What is the total (*a*) authorised, (*b*) subscribed, (*c*) paid up capital of the Company? How is it divided between preference, ordinary and deferred shares?

44. Please send copies of your balance sheets for the past eight years.

45. What is the amount of the debenture or other loans raised by the Company? On what dates were they raised and what is the rate of interest payable? If any period has been fixed for the redemption of those loans, it should be stated. Similarly, if a sinking fund has been established, the annual rate of contribution should be given.

46. What is the amount of the Reserve Fund (if any) created by the Company? Has this amount been accumulated from surplus profits, or from other sources, *e.g.*, by the issue of shares at a premium?

Cost of production.

47. Please fill up Forms I and II. To what extent do you consider that your costs of production are capable of further reduction? Are you in a position to furnish the Board with the information as to the cost of production in any competing country?

48. If the rate of depreciation you allow is different from the rates allowed by the Income-tax authorities, please explain the variations.

49. What is the working capital which the Company requires according to the output equivalent to its full capacity?

50. Is the Company able to provide all the working capital it requires from share and debenture capital, or is it necessary to borrow additional capital for this purpose?

51. If additional working capital has to be borrowed, what is the amount borrowed and the rate of interest payable?

52. What is the average value of the stocks of finished goods held by the Company? What period normally elapses between production and payment?

53. Does the Company find it necessary to hold large stocks of fuel or raw materials? If so, the average value of the stocks held should be stated.

54. Has the Company a Head Office other than the office of the local management? Is it under the control of a firm of Managing Agents?

55. If the answer to Question 54 is in the affirmative, please state—

(i) the annual amount of the Head Office expenses.

(ii) the Agents' commission.

Claim for protection.

56. In paragraph 97 of their report, the Fiscal Commission laid down three conditions which in ordinary cases ought to be satisfied by industries claiming protection. Do you claim that these conditions are satisfied in the case of your products?

A. Do you claim that the industry possesses natural advantages such as an abundant supply of raw materials, cheap power, a sufficient supply of labour or a large home market?

B. Do you claim that, without the help of protection, the industry is not likely to develop at all, or is not likely to develop so rapidly as is desirable in the interests of the country?

C. Do you claim that the industry will eventually be able to face world competition without protection?

These conditions have been approved by the Government of India and by the Legislative Assembly, and it is therefore of great importance to ascertain whether they are satisfied. If you consider that your industry fulfills these conditions, the reasons for your opinion should be fully explained.

57. Do you claim that your industry satisfies either or both of the conditions mentioned in paragraph 98 of the Fiscal Commission's report, *viz.*:—

(*a*) that the industry is one in which the advantages of large scale production can be achieved, and that increasing output would mean increasing economy of production,

(*b*) that it is probable that in course of time the whole needs of the country could be supplied by the home production?

58. Do you consider that your industry is of importance on national grounds and therefore deserves protection apart from economic considerations?

59. If you claim that protection for the Magnesium Chloride Industry should be continued, please state to what extent your claim is justified by improvement in efficiency of manufacture as judged by reduction in the cost, reduction in losses in the process of manufacture and improvement in the quality.

60. What is the amount of the protection which you consider necessary?

N.B.—The reasons for proposing the particular rate recommended should be explained.

61. Do you recommend any form of assistance other than a protective duty? If so, please state what form such assistance should take and the reasons for your proposal.

N.B.—If you have works at different places, please give information and figures for each of them separately so far as necessary.

FORM I.

Total expenditure for each of the last 8 years (i.e., *from 1929-30*).

(See Question 47 of the Questionnaire.)

Manufacturing expenses.	
1. Raw materials	
2. Power and fuel	
3. Ordinary current repairs and maintenance of buildings, plant and machinery	
4. Labour	
5. General services, supervision and local office charges	
6. Packing including the cost of drums .	
7. Miscellaneous, water, lighting, royalties, etc.	
Total .	
Overhead charges.	
8. Depreciation at Statutory rates .	
9. Interest on working capital . .	
10. Managing Agents' charges . .	
11. Directors' and Auditors' fees . .	
12. Insurance	
13. Rents, rates and taxes excluding income-tax and royalties . . .	
14. Selling expenses	
15. Miscellaneous	
Total .	
Gross Total .	
Credit for materials recovered, if any .	
Net Total .	
Total quantity produced .	

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FORM II.

Cost per cwt. of product produced for each of the past eight years (i.e., *from 1929-30*).

(See Question 47 of the Questionnaire.)

Manufacturing expenses.

1. Raw materials . . . . . .
2. Power and fuel . . . . . .
3. Ordinary current repairs and maintenance of buildings, plant and machinery . . . . . .
4. Labour . . . .
5. General services, supervision and local office charges . . . . . .
6. Packing including the cost of drums .
7. Miscellaneous, water, lighting, royalties, etc . . . , . .

Total .

Overhead charges.

8. Depreciation at Statutory rates .
9. Interest on working capital . .
10. Managing Agents' charges . .
11. Directors' and Auditors' fees . .
12. Insurance . . . .
13. Rents, rates and taxes excluding income-tax and royalties . . .
14. Selling expenses . . . . .
15. Miscellaneous . . . . .

Total .

Gross Total .

Credit for materials recovered, if any .

Net Total .

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Pioneer Magnesia Works, Bombay.

A.—WRITTEN.

(1) *Letter dated the 3rd January, 1938, to the Secretary, Tariff Board.*

Re TARIFF BOARD ENQUIRY ON MAGNESIUM CHLORIDE.

Referring to the informal conversations held in Bombay last week with the Chairman and Member of the Tariff Board, there are one or two important matters to which their attention may be invited.

The two best known uses of Magnesium Chloride are as a size ingredient for cloth manufacture and for making what is known as oxy-chloride cement by mixing it with magnesite for purposes jointless composition flooring.

For the former there would be no lack of information available from various mill agents and representatives of the Millowners' Associations concerned, as also from the enclosed copies of Bulletin No. 9 issued by the Department of Industries, Bombay, entitled "The Possibility of the Use of Magnesium Chloride in the Sizing Process of Handloom Weavers" by Messrs. P. N. Joshi, M.Sc. (Tech.), and J. F. Valladares, A.T.I., which would also enable the Board to see what immense scope may be newly opened for this purpose in the million or two handlooms now working all over India. It may be mentioned that this enquiry was undertaken at our expense and upon our initiative, and further information could be obtained in the matter by reference to the Director of Industries, Old Custom House, Fort, Bombay.

As regards the latter, however, it may be observed that though Magnesium Chloride is most extensively used in the Western Countries and in America for composition flooring as well as for tile making and stucco work in modern architecture, with very few exceptions, this use is still not sufficiently known or developed in India and there is immense scope for its future expansion.

In fact we ourselves have also put this problem for critical examination and research before the Industrial Research Bureau attached to the Government Test House, Alipore, Calcutta, whose report is awaited with much interest. We further beg to submit herewith for the information of the Board, a Book entitled "Composition Flooring and Floorlaying" by A. W. Comber, along with a reprint of an article published in the September, 1937 issue of "Sands, Clays and Minerals", marked "Oxy-Chloride Cements and their Application" by H. Courtney Bryson which will throw additional light on the subject. The Book may kindly be returned when done with.

Should the Board desire to know further about this matter, we suggest that an enquiry be addressed to the following who are already familiar with and interested in this product and who are using it with advantage for this very purpose:—

(1) Mr. A. Fatah, Managing Director, The Oxy-Chloride Flooring Products, Limited, Arthur Bunder, Colaba, Bombay. This party has been one of our best customers and buys regularly our Magnesium Chloride for Composition Flooring purposes to the tune of several hundred tons per annum for years past.

(2) The Railway Board and the Indian Stores Department may also be able to give you some useful information more particularly as they require the article very largely for use in making the basement floors and for flooring of their railway wagons.

(3) Bell's Asbestos (India), Limited, Ballard Estate, Fort, Bombay, who are also importers and users of this material.

Regarding the questionnaire of the Board to be issued to the parties concerned, as the time allowed for answering is as we understand very short, may we request the favour of your kindly supplying the same to us at the earliest, for which we shall feel much obliged.

P.S.—List of articles sent under separate registered cover for the information and use of the Tariff Board:—

(1) Book on Composition Flooring and Floorlaying by A. W. Comber.

(2) 3 copies of Industries Departments' Bulletin No. 9 mentioned above.

(3) Typed article on Oxy-Chloride Cements and their application.

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(2) *Demi-official letter No. 32, dated the 7th January, 1938, from the Secretary, Tariff Board, to the Managing Director, the Pioneer Magnesia Works, Bombay.*

In connection with the enquiry into the Magnesium Chloride industry the Board would like to know the names and addresses of—

(1) importers of the commodity and

(2) any other works in India besides the Pioneer Magnesia Works manufacturing the same.

An early reply is requested.

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(3) *Letter dated the 10th January, 1938, from the Pioneer Magnesia Works, Bombay, to the Secretary, Tariff Board.*

Re TARIFF BOARD ENQUIRY INTO MAGNESIUM CHLORIDE.

Reference your D.-O. No. 32 of 7th January, 1938.

In reply to your above favour we beg to state as under:—(1) It may be noted that during recent years the imports of this commodity have considerably fallen and their place is taken by the Indian manufacture which now caters for nearly 75-80 per cent. of the trade in this country. With very few exceptions therefore we are not aware of any particular parties interested in their import. A few odd consignments may, however, be occasionally imported by some mills as well as through the following parties for aught we know, *viz.*:—

(1) The Sizing Materials Co., Ltd., of Ismail Buildings, Hornby Road, Fort, Bombay.

(2) Messrs. P. M. Hutheesing & Sons, of Apollo Street, Fort, Bombay.

(3) The Havero Trading Co., Ltd., of Havero Building, Ballard Estate, Bombay.

(4) Messrs. Kantawalla Nanavatty & Co., of Apollo Street, Fort, Bombay,

and so on.

2. The only other Magnesium Chloride Works in India besides our own two factories of Kharaghoda and Mithapur are the following:—

The Mayurdhwaj Swadeshi Magnesia Works, of Kuda in the Dhrangadhra State near Wadhwan, whose sole selling agents are Messrs. Trikumlal Mahasukram & Co., Kalupur Post, Ahmedabad (Bombay, Baroda and Central India Railway).

The Board's questionnaire is awaited. We also trust that our previous letters and accompaniments sent during the past week to the Tariff Board's Poona address have been duly received and are receiving attention.

(4) *Circular letter No. 64, dated the 13th January, 1938, from the Secretary, Tariff Board, to all Manufacturers and Importers.*

In connection with the enquiry referred to the Tariff Board by the Government of India, Department of Commerce, in their Resolution No. 199-T. (1)/37, dated the 18th December, 1937, as to the desirability of continuing measures for the protection of the Magnesium Chloride industry after the 31st March, 1939, I am directed to forward herewith a copy of the questionnaire issued by the Board and to ask that if you want to make any representation on any of the points raised therein, it should be submitted (with 4 spare copies) to the Secretary to the Board at No. 1, Council House Street, Calcutta, not later than the 7th February, 1938.

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(5) *Letter dated the 2nd February, 1938, from the Pioneer Magnesia Works, Bombay, to the Secretary, Tariff Board.*

Re. CASE FOR PROTECTION TO THE INDIAN MAGNESIUM CHLORIDE INDUSTRY.

Reference your No. 64, dated Camp Poona, the 13th January, 1938.

Referring to your above communication we have the honour to inform you of having forwarded to-day under registered book-post cover the following:—

1. Five copies of our printed answers to your questionnaire with claim for protection and other miscellaneous statements as required and therein detailed.
2. Two sets of typed Balance Sheet statements of our Company for Kharaghoda and Mithapur for the past 8 years. Kindly note that these are not for publication, and should be treated as private and confidential and returned at convenience when done with. (These are going separately with this letter.)
3. Six printed Brouchures marked "Pioneer Magnesium Chloride".

We have already sent to you the following, *viz.*:—

Copies of Bulletin No. 9 of the Bombay Industries' Department on "The possibility of the use of Magnesium Chloride in the sizing process of handloom weavers".

Book on "Composition Flooring and Floorlaying" by A. W. Comber.

Article from "Sands, Clay and Minerals" for September 1937, marked "Oxy-Chloride Cements and their Application".

Copies of our Memorandum in answer to Government of India's questionnaire No. 312-T. (10), dated the 1st September, 1933, regarding Assistance to the Magnesium Chloride industry under the safeguarding of Indian Industries' Act (*confidential*).

As the time at our disposal for the preparation of the case and the various statements, etc., as required by the Board, has been much too short to allow of careful checking in the rush of the moment, it is possible that some errors may have crept in here and there in the printed copies now sent, for which we beg to be excused.

Trusting this will meet with the favourable consideration of the Board, and requesting a line in acknowledgment.

Re TARIFF BOARD ENQUIRY ON MAGNESIUM CHLORIDE. CASE FOR PROTECTION.

ANSWERS BY THE PIONEER MAGNESIA WORKS, LTD., TO QUESTIONNAIRE OF THE INDIAN TARIFF BOARD RECEIVED WITH THEIR LETTER NO. 64, DATED CAMP POONA, THE 12TH JANUARY, 1938.

Introductory.

1. Our Firm of Pioneer Magnesia Works was first established in 1915 as a private Partnership concern and then turned into a Private Limited Company in August, 1935.

2. The whole of the Capital is held by Indians. There are three Directors, all Indians. All employees including the superior staff are also Indians.

3. The products and by-products now manufactured or for which fullest preparations have been made for immediate production on a commercial scale, are the following :—

(a) Magnesium Chloride in Solid fused, Crystals and Flake form. ($Mg.Cl_2$ $6H_2O$.)

(b) Magnesium Sulphate or Epsom Salt ($Mg.$ SO_4 $7H_2O$).

(c) Refined Salt (Sodium Chloride, $NaCl$).

(d) Magnesium Carbonate ($Mg.$ CO_3).

(e) Magnesium Oxide ($Mg.$ O).

(f) Potassium Chloride (KCl).

4. We first started with Magnesium Chloride manufacture at Kharaghoda in 1915, then at Mithapur and gradually turned attention to the various other by-products enumerated in answer 3 above, after a deal of research under expert technical advice and guidance.

5. The quantities of each different product and by-product which our Works as at present equipped, could successfully manufacture annually if working to capacity should be as under :—

Approximately.

	Kharaghoda.	Mithapur.	Total.
	Tons.	Tons.	Tons.
Magnesium Chloride . .	9,000	4,000	13,000
Magnesium Sulphate . .	*250	3,000	3,250
Refined Salt . . .	600 (about 16,200 B. Mds.)	...	600

6. In view of the fact that our main product from the beginning has been Magnesium Chloride and that the other products have just started and are only now coming gradually into operation on a bigger scale, the figures of manufacturer given below from 1928 onwards relate to two of the products only, *viz.* :—

Magnesium Chloride and Refined Salt.

Calendar year.	Magnesium Chloride Production. At Kharaghoda.	Magnesium Chloride Production. At Mithapur.	Total.	Refined Salt Production. (28 Mds. to a ton.)	
	Tons.	Tons	Tons.	B. Mds.	Tons.
1928 . .	2,804	...	. .	5,308	200
1929 . .	3,273	...	...	6,594	240
1930 . .	4,402	. .	...	4,302	160
1931 . .	5,192	...	...	8,659	320
1932 . .	6,755	121	6,876	11,984	528
1933 . .	5,626	962	6,588	14,084	503
1934 . .	5,838	1,483	7,321	10,668	381
1935 . .	5,365	2,025	7,390	11,564	413
1936 . .	5,536	37†	5,573	7,728	276
1937 . .	6,932	2,206	9,136	12,320	440

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* From the Sludge left after Magnesium Chloride production.

† This was due to the dismantling of the then existing Magnesia Plant and its re-organization in view of the installation of the new Epsom Potash Plant at Mithapur.

Our two Works are:—

(*a*) At Kharaghoda 371 miles from Bombay, 63 miles from Ahmedabad, and 23 miles from Viramgam on the Broad Gauge line of the Bombay, Baroda and Central India Railway.

These are situated on the out-skirts of the big Pritchard Salt Works of the Government of India, forming part of the Runn of Cutch and located about 60 miles from the Gulf of Cutch.

(*b*) At Mithapur. These Works are situated 7 miles from Okha Port and 12 miles from Dwarka on the Jamnagar and Dwarka Railway line, in the territory of His Highness the Gaikwar of Baroda. They are about 300 miles by rail from Ahmedabad and about 400 miles by sea from Bombay *viâ* Okha Port.

We fully consider both these Works very advantageously situated in respect of:—

(*a*) RAW MATERIALS, *viz.*, "Bitterns" and Common Salt both of which are in plentiful supply.

(*b*) SOURCES OF POWER AND FUEL.

(*c*) MARKETS.

(*d*) LABOUR AND OTHER CONSIDERATIONS.

7. (*a*) We fully claim that all our products are equal in quality and appearance to the best imported chemicals. This could be easily seen from the large annual Mill Contracts held by us year after year from the biggest and most important Textile groups—both European and Indian—throughout India, not to mention the further repeat orders received from our various foreign Agents in Europe and elsewhere, during the past so many years of our existence.

Moreover we claim that our Magnesium Chloride is being used by fully 85 per cent. if not more, of the Indian Mills, and even goes to the Lancashire Mills, and we can say without boast that there is not a single Mill in India that has not at one time or other used our material for sizing purposes.

As for Refined Salt, the Director of Contracts, Army Headquarters, Simla, has repeatedly favoured us with his annual contracts for this material, for the consumption and use of the British troops in India.

(*b*) & (*c*) Yes, we can command almost the same price in competitive markets as the imported chemicals.

(*d*) As regards the main product Magnesium Chloride, the former prejudice in favour of the foreign product has now to a great extent died down, and it is fully hoped that in the case of any other new Chemicals put upon the market, no such difficulty will arise, provided of course the quality and price, be suitable.

8. (*a*) & (*b*) The principal industries requiring Magnesium Chloride and the purpose for which it is used are the following:—

(1) Textile Mills, where it is used as an important ingredient of sizing the yarn before it goes into weaving, along with other substances like wheat flour, china clay, zinc chloride and tallow, etc. Magnesium Chloride being hygroscopic in character the sized yarn absorbs and retains the moisture and is thus rendered pliable and soft before going on the looms. It could also be successfully used by the Handloom weavers as described in the Brochure published by the "Department of Industries, Bombay Presidency, Bulletin No. 9 on 'The Possibility of the Use of Magnesium Chloride in the Sizing Process of Handloom Weavers' by—P. N. Joshi, M.Sc. (Tech.). and J. F. Valladares, A.T.I.". This is already submitted to the Board.

(2) It is also widely used for making what is known as Oxy-Chloride Cement along with Magnesite for the laying of Jointless Composition floors in basements and buildings and in the Railway wagons and compartments, as well as for Stucco and other building work, and to a certain extent in the grinding of certain machinery parts in the Rice Mills in Burma where too we are supplying in small quantities.

Vide Book called "Composition Flooring and Floorlaying" by A. W. Comber and an article entitled "Oxy-Chloride Cements and their Application" by H. Courtney Bryson from "Sands, Clays and Minerals" for September, 1937, already sent for the Board's information.

(3) Many other important derivatives can also be obtained by the combination of Magnesium Chloride with other chemical substances.

For other uses of this material, the Tariff Board's attention may be invited to a Report, dated the 20th September, 1924, obtained by us from America and printed at pages 71-72 of the first Report of the Tariff Board in 1925, and also at page 43 of the second Report in 1929.

EPSOM SALT is widely used for the finishing processes in Textile Mills as also for pharmaceutical purposes.

REFINED SALT is meant for human consumption and may also be useful in dyeing and bleaching in the Cotton Mills.

MAGNESIUM CARBONATE is used as a filler in the Rubber Industry.

MAGNESIUM OXIDE is widely needed for insulation purposes.

POTASSIUM CHLORIDE is of prime necessity as a fertiliser and as an important base for the production of various other Potassium Salts.

9. The length of our working season year after year is between January and June, as owing to physical difficulties of collecting and obtaining the "Bitterns" from the Salt Works (except during the busy salt season from November to May), we are handicapped and unable to keep the Works going all the year round, which also reflects upon our costs of production.

10. As regards the process, *vide* a short separate technical note prepared for us by the well-known technological chemist and expert Mr. Kapilram H. Vakil, M.Sc., Tech. (Manch.), B.A., F.I.C., M.I., Chem., who has wide first hand knowledge and experience of the subject and has done a lot of research work and helped us considerably in the lay-out and in effecting improvements in our Kharaghoda Works also, and it is to his genius that we owe our Magnesia and By-products Plants at Mithapur.

Vide also our small Brochure prepared for distribution and showing the comparative analyses made at different times and places, both of our own as well as of the German material, which will give a clear idea as to the quality of our product.

11. The principal raw material used in the manufacture of Magnesium Chloride and other allied products, is what is known as "Bitterns" or the residual mother-liquor discharged from the Salt beds after separation of Sodium Chloride contained in brine or Sea water. This mother-liquor or lye also contains along with Magnesium Chloride in varying proportion, Magnesium Sulphate or Epsom Salt, traces of Bromine, Potassium Chloride and so on as will be noticed from the analysis of the "Bitterns". Besides several important derivatives could also be obtained in combination with one or the other of certain chemical substances.

Refined salt is obtained both by Solar evaporation and by artificial heat from Common Salt, by a further process of recrystallisation of the primary Sodium Chloride which is originally not so highly pure.

12-14. The "Bitterns" is generally required for Magnesium Chloride production in the proportion of 2 to 2½ tons of "Bitterns" to 1 ton of

Magnesium Chloride, varying with the quality, time of collection and such like important factors.

Taking an average of 2½ tons of "Bitterns" to 1 ton of the main finished product Magnesium Chloride, a quantity of about 20,000 to 22,000 tons of the raw material may be needed on an annual production of about 9,000 tons at full capacity at Kharaghoda, and about 10,000 to 12,000 tons more at Mithapur on an yearly output of about 3,000 to 4,000 tons.

As the other by-products enumerated above come out more or less at an intermediate stage as derivatives in combination with other chemicals, no extra quantities of "Bitterns" would be needed for their production.

As for Refined Salt, the quantity of Common Salt needed would be generally about 20-25 per cent. higher, depending upon the purity, the mode of recovery and recrystallisation, and the nature and porosity of the soil in case of Solar evaporation. The customary unit in the case of Sodium Chloride is a Bengal Maund of 82½ lbs., and for Magnesium Chloride and other Chemicals a cwt., or a ton unit of 27·22 B. Mds.

For Magnesium Chloride and other allied products, the main raw material is "Bitterns" which as explained above is the residual mother-liquor or lye discharged from the Salt pans after its separation from the brine. It is roughly found in the ratio of 10 tons of Salt to one ton of **Magnesium Chloride** or thereabouts.

We firmly believe that our industry is fully assured of a sufficient supply both for domestic production as well as for exports, of all the main raw materials for an indefinite period.

Labour.

15. We are not employing any other labour except Indian labour.

16. (*a*) The total number of Indian workmen employed by us during the busy working season from January to May, is approximately:—

1. AT KHARAGHODA about 300 field workers for the collection and haulage of Bitterns at the Salt Works, and about 100 men for the Factory and sundry other work. Total about 400.
2. AT MITHAPUR where conditions are ENTIRELY DIFFERENT and Bitterns is lifted by mechanical means, no field labour is necessary for the work and only about 40 workers are needed for drum making as well as for other Factory work, thus reducing the manual labour to a minimum.

(*b*) The average wages earned by the workmen roughly come from 12 annas to a rupee per head per diem for males and slightly less for the female labourers, and more or less the same conditions prevail at both the Works with some slight variation.

17. Our wages bill from 1929 onwards comes to the following:—

Approximate wages paid.

Years. (Jan. to Dec.)	At Kharaghoda. Rs.	At Mithapur. Rs.	Total. Rs.
1929	27,540	...	27,543
1930 . . .	33,033	...	33,033
1931	32,819	...	32,819
1932	40,865	9,222	50,087
1933	35,176	16,236	51,412
1934 . . .	37,984	18,483	56,367
1935	36,306	22,583	58,889
1936	34,690	2,434	37,124
1937	41,492	...	...

18. (*a*) The Indian labour force is quite adequate for all our needs.

(*b*) It is also drawn from neighbouring localities from within a few miles' radius only.

19. At Kharaghoda we have built cooly quarters to house all our labour with suitable provision for free water supply, medical aid, primary education and such like amenities. Besides, we also set apart every year, a separate bonus fund in our Books of account for the beneficial use of our own staff.

The superior staff is also well-housed at the Company's expense.

At Mithapur as the number of workmen employed on our work is so small, the question is not so acute. But all the same, there is sufficient accommodation both for the workmen and the other staff, and we may safely say that our labour at BOTH PLACES HAS BEEN quite satisfactory and contented and we have been singularly free from all strikes and labour trouble ever since the start.

20. (*a*) Power employed at Kharaghoda is mainly derived from Crude Oil Engines, and at Mithapur, both Steam and Electric power are used.

(*b*) At Kharaghoda Firewood is used for burning in the furnaces underneath the boiling kettles, whereas coal is used for the same purpose at Mithapur. In addition steam power as well as electricity are consumed at Mithapur for the requirements of our By-products Plant. Firewood is brought by rail from Godhra and surrounding districts (about 150 miles from Kharaghoda) and coal is brought from Calcutta to Mithapur *viâ* Okha Port. The supply at both places of the requisite Fuel and Power needed for all purposes, is always available, without any difficulty.

21. The total quantity of fuel consumption per unit of output of the main product Magnesium Chloride works out as under:—

At Kharaghoda about 28 lbs. of Firewood per cwt. of the finished Magnesium Chloride, and at Mithapur 26 lbs. of coal is required for the same unit of production.

22. The price per ton of fuel is as under:—

Approximate only.

(*a*) FOR KHARAGHODA, Firewood from Godhra and surrounding districts costs roughly:—

Rs.	A.	P.	Per 100 B. Mds.—3·66 tons.
24	0	0	Prime Cost c.o.r. Godhra side say about 150 miles distance.
16	0	0	Railway freight from Godhra to Kharaghoda.
5	0	0	Handling and Cutting charges, etc.
45	0	0	
to			
50	0	0	

Total Works Cost, *i.e.*, Rs. 12-4-0 to about Rs. 13-12-0 per ton.

(*b*) FOR MITHAPUR first class Steam Coal works out as under:—

—	Bengal Coal.		C. P. Coal (of lower calorific value than Bengal Coal).	
	Per ton.		Per ton.	
	Rs.	A.	Rs.	A.
Prime Cost at pit's mouth . .	6	8	5	0
Transport Charges by sea or Rail .	14	8	15	4
Port Charges and Handling at Okha .	1	0	...	
Railway freight from Okha Port to Mithapur and or handling charges at the Factory	3	0	0	12
Total Cost per ton *ex*-Works .	25	0	21	0

In case of electric power consumed at Mithapur in the By-products Plant, this is supplied by the Okha Salt Works, Ltd., from their own generating plant on a moderate sliding scale according to consumption.

Market.

23. The total Indian production per annum from 1928 onward shows as under:—

Years	Magnesium Chloride.			Refined Salt.
(Jan.-Dec.).	Kharaghoda.	Mithapur.	Kuda (Dhrangadhra).	Kharaghoda.
	Tons.	Tons.		B. Mds.
1928 . .	2,804	...		5,308
1929 . .	3,273	...		6,594
1930 . .	4,402	...		4,302
1931 . .	5,192	...		8,659
1932 . .	6,755	121	An average annual production of about 1,000 tons may be taken, as a safe basis.	11,984
1933 . .	5,626	962		14,084
1934 . .	5,838	1,483		10,668
1935 . .	5,365	2,025		11,564
1936 . .	5,536	37*		7,728
1937 . .	6,932	2,206		12,320
Total .	51,723	6,834		93,211

No figures are given of the other products as these plants have only recently come into operation and most of them are even now slowly working and must take some time to develop on a sufficiently big scale. They may be said to have passed the experimental stage, however, and we have already begun putting them on the market commercially by slow degrees.

24. The total annual Indian demand for each product may be roughly estimated as under:—

Magnesium Chloride for cloth sizing in mills.	Epsom Salt (Mag. Sulphate).	Potassium Chloride, KCl.	Magnesium Oxide, MgO.	Magnesium Carbonate, Mg CO_3
Tons.	Tons.	Tons.	Tons.	Tons.
7,000	3,000	No definite information available.		

25. With the increase in consumption of the Indian Mill Industry whether by addition of looms or by double shifts or by working on coarse cloth as against much finer cloth and owing to any further likely expansion of the foreign market, there is every possibility of a substantial rise in demand in the future. Besides, the two other important factors of further likely increase in demand, *viz.*, for the Handloom and the Flooring Industry, are as yet entirely undeveloped and may mean some few thousand tons more yearly. Our most important markets in India for Magnesium Chloride and other products are mainly Bombay and Ahmedabad and all other important Mill Centres like Calcutta, Delhi, Indore, Ujjain, Sholapur, Nagpore, Cawnpore, Gujarat, Kathiawar and the South Coast, wherever the Textile Mills be located. Bombay and Ahmedabad are 371 and 63 miles respectively from the Kharaghoda Factory, and the mileages of the other places could

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* Due to dismantling and reorganization of the Plants.

be known from the separate statement given of relative Railway freights prevailing on our Magnesium Chloride consignments. Calcutta is supplied generally from the Mithapur Factory by boat from Okha by arrangement with the Okha Salt Works, Ltd., along with their Salt cargo in their specially chartered Salt steamer during the fair season.

23. We have also successfully entered the foreign market and have upto now made substantial exports of our Magnesium Chloride as the appended Report and Statement from our Export Agents will show.

It may be noted that the consumption of Magnesium Chloride in the Building and Flooring Trade in the West and in America runs into 6 figures. GREAT BRITAIN IS NOT A PRODUCER but a large importer mainly from Germany, France and India as per separate statements furnished of the annual imports into Great Britain according to the London Customs Returns. Just now owing to various import restrictions and trade, barriers however, in several parts of Europe and due to barter arrangements, quota system and other exchange difficulties, we are unable to push our products as well as might be wished. But when these become normal, it is permissible to hope that our Exports might at least be doubled.

None of our materials is used for the manufacture of explosives for Military purposes. But at an intermediate stage between Epsom Salt and Potassium Chloride, Bromine can be successfully recovered for use in munitions and in the preparation of pharmaceuticals and dyestuffs, photography and in the Rubber Industry.

(*a*) & (*b*) Except for Refined Salt, none of our products is useful to or purchased by Government or by any other public bodies or Departments. Our Refined Salt however has been supplied in the past to the Director of Contracts, Army Headquarters, Simla, under Contract for many years for the consumption of the British troops in India.

Foreign Competition.

30. The most important foreign country offering the keenest competition in Magnesium Chloride in the Indian Market is first and foremost Germany, which before the War held a monopoly of the world's supply. As far as we are concerned besides Germany, there has been formidable opposition in the past from Japan also (as fully discussed in our Memorandum dated the 8th September, 1933, in answer to the Questionnaire of the Government of India, Commerce Department, Simla, No. 312-T. (10), dated the 1st September, 1933, regarding Assistance to the Magnesium Chloride Industry under the Safeguarding of Indian Industries' Act, of which 3 copies have already been submitted to the Tariff Board as desired).

Besides, of late a few trial shipments of the material have also come from the Dead Sea Plant at Palestine at VERY KEEN CUT PRICES which if allowed unchecked, might create a most embarrassing situation for us and even threaten the life of Industry by forcing it to compete on such unremunerative terms. As the Board may probably know, according to calculation and figures of competent Authorities, the Dead Sea is roughly capable of yielding BULLIONS of tons of Magnesium Chloride, Epsom Salt, Potassium Chloride and such other chemicals and but for some transport or othed difficulties, they might well be in a position to swamp all the world markets, anytime.

31. The German method of production is indicated at pages 44 and 48 of the Second Tariff Board Report of 1929. We have adopted processes of manufacture suitable to our needs and adaptable to local conditions. But to say that any of the chief competing foreign countries enjoy any special advantage over us in this regard is not correct. For, to the best of our knowledge as far as Germany at least is concerned, their raw material "Bitterns" is obtained from the splitting of a double Salt of Potassium and Magnesium Chloride occurring as Cernallite, which subsequently has to undergo a more or less similar process of manufacture as ours with slight variation.

Thus except for this initial difference in obtaining the "Bitterns", there seems no further material difference in the method of production—whether here or in Germany of the main finished product, *viz.*, Magnesium Chloride.

32. (1) The prices at which German and Japanese Magnesium Chloride have been or are being now landed and sold in India, may be gathered from the following:—

		German. Per ton, £ s. d.	German. *i.e.*, Per Cwt. Rs. A. P.	Japanese. Per ton, £ s. d.	Japanese. *i.e.*, Per Cwt. Rs. A. P.
(*a*) F.o.b. price	c.i.f. cost.	4 10 0	3 0 6	2 6 0	1 8 6
(*b*) Freight					
(*c*) Insurance and Trade Charges					
(*d*) Customs Duty (Originally As. 8-9 now raised to Rs. 1-5-9) specific per ton or 25 per cent. *ad valorem* whichever be higher		...	1 5 0	...	1 5 0
(*e*) Landing Charges, Clearing forwarding and delivery up to Mills in Bombay or f.o.r Bombay		...	0 5 0	...	0 5 0
Total		...	4 10 6	...	3 2 6

Delivered at Bombay Mills.

N.B.—Against this our almost uniform price level of about Rs. 4-5-0 per cwt. free Bombay Mills delivery and Mill Weights for years past, MAY BE WORTH NOTING. This will clearly show that we have not taken any mean advantage of our position or tried to squeeze our customers in any way.

In the absence of reliable information it is difficult to arrive at a true estimation of the f.o.b. prices and or sea freights and insurance and other trade charges in the case of the foreign material. But judging from experience it may be safe to presume the following:—

	For German Magnesium Chloride. £ s.	For Japanese Magnesium Chloride. £ s.
C.i.f. Bombay prices per son as per above statement	4 10	2 6
Deduct following:—		
Sea freights	1 5	1 5
Insurance and trade charges	0 5	0 5
For transportation from Statsfurt up to the Ocean-going steamers	0 10	0 5
	2 0	1 15
	2 10 per ton	0 11
	Ex-Works, *i.e.*, Re. 1-10-6 per cwt.	*Ex*-Works, *i.e.*, As. 5-10 per cwt.

Remarks.—As against a freight rate of Rs. 40 per ton demanded on our Magnesium Chloride shipments from Bombay to Japan.

The source of information as to prices at which imported chemicals enter the country is obtained from the Customs Returns of the various Ports of entry, which may be taken as fairly correct, except in certain cases where various chemicals are grouped together and not separately shown under each particular heading as may be desired.

(*a*) Our Magnesium Chloride price realizations from 1930 to 1937 work out as under:—

Average Gross Sales Realization free Ahmedabad and Bombay or Mill deliveries (per cwt. basis)—

	1930.	1931.	1932.	1933.
	Rs. A. P.	Rs. A.	Rs. A.	Rs. A.
Bombay . .	3 3 3	3 3	4 0	4 2
Ahmedabad .	3 4 0	3 0	4 4	4 4

	1934.	1935.	1936.	1937.
	Rs. A. P.	Rs. A.	Rs. A.	Rs. A.
Bombay . .	4 3 0	4 3	4 4	4 4
Ahmedabad .	4 4 0	4 4	4 4	4 4

NOTE.—The above figures are inclusive of Railway freights, town duty, and miscellaneous handling and delivery charges up to Mill premises and shortage allowances, trade discounts, etc., etc.

In the case of the up-country Mills freights and other charges are payable by the customers.

In the case of Calcutta, Madras and other South Indian Ports, deliveries include steamer freights and are on c.i.f. basis.

33. (*a*), (*b*) & (*c*) There are no Trusts or combines operating in our chemicals in India. As far as Germany is concerned there is a vast organisation known as the Deutsche Chlor-Magnesium Syndikat the working of which and the extent of whose ramifications is described at pages 49-50 of the Second Tariff Board Report of 1929 and need no repetition.

34. As far as we can judge the prices at which the foreign producers sell for export for India are unremunerative. The only evidence for the assumption is based upon our own practical experience and the likelihood of similar conditions prevailing elsewhere in other principal producing countries (*vide* also our answer to Question 31 above). Moreover, we have reason to believe that in the case of Germany and Japan for instance, a certain export bounty in one shape or other is also given to stimulate their export trade, not to mention the added advantage Japan has at present of a highly depreciated currency favouring her exports.

35. The Railway freights from Kharaghoda to our main markets in India could be readily noticed from the separate Statement given of Railway rates both in bulk and for loose lots on Magnesium Chloride to various destinations in India. The steamer freight on our material from the Mithapur Factory *viâ* Okha Port or *viâ* Bombay to Foreign Ports including transportation charges from the Works to Ports of destination in Europe comes to about £1-10-0 per ton.

Internal Competition.

36. (*a*) & (*b*) At the time of the last two Enquiries we were the only manufacturers in India of Magnesium Chloride, first at Kharaghoda and then at Mithapur, with the exception of a small production in our neighbourhood at a place called Kuda in the Runn of Cutch in the Dhrangadhra State. For a number of years those Works had stopped producing. But since 1931-32 and after the grant of Protection, they have again been resuscitated under the name of the Mayurdhvaj Swadeshi Mag-

nesia Works and Messrs. Trikamlal Mahasukhram & Co., Salt Merchants, 20, Rangwalla Market, Ahmedabad, are the sole selling Agents. Their annual production is about 1,000 tons. They do not manufacture any other products.

37. In order to prevent unnecessary, internal competition and rivalry amongst ourselves, we have arrived at a sort of working arrangement with the Kuda manufacturers in regard to our respective Magnesium Chloride sales in certain areas and proportions and prices which Agreement on the whole has been working satisfactorily for the past 5 years.

Equipment.

38. (*a*) We do consider that our Works are sufficiently large and well equipped as an economic unit to ensure economy.

(*b*) In our opinion the smallest unit of production for economic operation under present-day working conditions would be about three thousand tons of Magnesium Chloride.

39. The manufacturing process is sufficiently indicated in the separate Technical Note given. There have been several changes from time to time in the Plant and Machinery in replacement of or in additions to the original plant with a view to improvement of quality or for economy and recovery of by-products, etc. We fully believe that the results have fulfilled all our expectations.

40. We consider our present arrangements sufficient to meet existing conditions and are not therefore contemplating any new development for the moment unless they be particularly wanted or warranted by circumstances.

Capital Account.

41. The Block value of our property at both Factories as at 31st December, 1937, under different heads shows as under:—

Gross costs from books of account without depreciation—

Heads.	Kharaghoda.	Mithapur.
	Rs.	Rs.
(*a*) Leases and concessions .	*Nil*	*Nil*
(*b*) Lands	*Nil*	*Nil*
(*c*) Buildings . . .	86,693	67,731
(*d*) Plant and Machinery .	92,675	2,09,931
(*e*) Miscellaneous other Machinery and assets.	8,809	932
Total Rs. .	1,88,177	2,78,594

Approximate Total Depreciation accummulations from Books of Account for both Factories as at 31st December 1937.

For Kharaghoda.	For Mithapur.
Rs. 86,834	Rs. 54,323

Total—Rs. 1,41,161

(*f*) Goodwill . . Rs. 2,75,000 *less* Rs. 45,000 written off up to 31st December 1936.
Nett debit now standing Rs. 2,30,000.

NOTE.—The figures given above are inclusive of the new and up-to-date by-products plants at Mithapur and of the costs incurred in same connection at Kharaghoda. This does not however include the outlay on both our Boiled and Solar Evaporation Refined Salt Plants at Kharaghoda which without depreciation now stand in our Books of Account at Rs. 26,618 for Buildings, Plant and Machinery all told, with a total Depreciation fund as at 31st December, 1937, of Rs. 15,947.

42. Without going carefully into the question, it is difficult to form a correct estimation of the present-day costs under Buildings, Plant & Machinery of setting up a new Works for the same output and under the same conditions as ours. This would naturally depend upon various factors and conditions which we are unable to gauge at present.

43. Our Company's total Capital is as follows:—

	Rs.
(*a*) Authorized Capital	7,00,000
(*b*) Subscribed Capital	5,03,000
(*c*) Paid-up Capital	5,03,000

There are no Preference or Deferred Shares.

44. The Balance Sheets of our Company for the past 8 years are separately submitted as desired. It is requested that the same be treated as Private and Confidential and not published and may be returned when done with.

45. There are no debentures nor any Loans raised on the Assets of the Company. The question of redemption or of any Sinking Fund does not therefore arise.

46. The latest figures of Reserve Fund and other accumulations from surplus Profits only are as under:—

Item.	Amount up to 31st December, 1936. Rs.
1. Reserve Fund	3,000
2. Repairs and Renewals Fund	35,000
3. Bonus and Gratuity Fund	7,800

Cost of Production.

47. The two forms annexed to the Questionnaire are duly filled in and sent herewith as required regarding the Works Costs.

The only reductions possible would be in Overheads in proportion to the higher output and depending upon the higher or the lower costs of fuel and packing material, etc.

48. The rates of depreciation deducted are exactly as per Income-tax Schedule as shown below:—

Depreciation rates allowed for deduction by the Income-tax Authorities—

	Per cent.
Building	5
Temporary Sheds	10
Machinery	7½
Electric Plant	7½
Salt Plant	10
Wagons	7
Furniture and Dead Stock	5

It may be mentioned however that in the case of our Chemical Plant and Machinery, we consider the Scheduled rates much too low in view of the fact that owing to Chemical action, constant attention and repairs and replacements are needed, which are far in excess of the rates allowed for Income-tax purposes, and in our opinion the depreciation allowed on Chemical Plant and Machinery in our case should not be less than about 25 per cent.

Working Capital.

49. The Working Capital required according to output equivalent at full capacity of both our Company's Plants would be somewhere about Rs. 4 lakhs per annum or thereabouts.

50 & 51. There is no Debenture debt and all the Working Capital needed is provided for from the Company's Share Capital as well as from occasional temporary overdrafts or loans from Bankers and others on moderate terms in the usual course of business.

It is difficult to gauge accurately any additional Working Capital needed for borrowing as that would depend upon the circumstances and needs varying from time to time. The average annual rate of interest on all such is usually from 4 to 6 per cent. never more.

52 & 53. The average stock value of finished goods lying at both Factories at the close of each working season in June or so, would come to about Rs. 2 lakhs, owing to the fact that our Factories are seasonal only, and large stocks of the finished products have to be held ready at hand.

The period normally elapsing between production and payment usually comes to about 4 to 6 months.

Yes, besides the finished product it is thought advisable to leave at the end of the season fairly large stocks also of Coal, Firewood, Bitterns, as well as of empty drums and considerable quantities of Galvanised and black steel Sheets for drum making and of Copper sheets for making the boiling kettles and evaporating pans, etc., in order to meet any contingent demands and against the opening of the new season.

The total average value of the stocks so held and left at the Factories at the end of each working season at June end may be roughly gauged from the following:—

Items.	Approximate Quantities.	Approximate Value.
	Tons.	Rs.
Coal	300	7,500
Firewood	100	1,500
Bitterns	...	1,000 (at Kharaghoda only).
Empty Drums and Zinc Sheets for Drum making	...	61,000
Copper Sheets	...	5,000
Miscellaneous Stores	...	5,000
		80,000 roughly.
Add for finished products (about)	...	2,00,000

Agent's commission and Head Office expenses.

The Company's Head Office as apart from the local establishments at either works, is located at its Registered Office in Bombay. There is no firm of Managing Agents as such, but all the work is carried on by the Company's staff under one Managing Director assisted by the Company's Secretary and Manager and the Works Managers.

1. The Company's Head Office expenses average annually about Rs. 15,313 during the last so many years which calculated on an average annual production during the same period of say about 5,826 tons of Magnesium Chloride only AT BOTH FACTORIES (not counting other by-products) would work out at about As. 1-10 per cwt., basis on the finished product.

Forms I and II as per Tariff Board's Questionnaire showing total expenditure for Kharaghoda Factory from 1929 up to 1936.

(See Question 47.)

	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Manufacturing Expenses :—								
1. Raw Materials . . .	13,648	16,331	17,493	19,593	17,910	15,874	14,265	16,425
2. Power and Fuel . . .	23,317	32,409	37,039	24,937	19,241	17,212	17,835	16,967
3. Ordinary Current Repairs and Maintenance of Buildings, Plant and Machinery.	4,850	3,944	8,920	10,489	10,629	12,010	10,737	13,508
4. Labour	13,892	16,702	15,326	21,272	17,266	22,010	22,041	18,265
5. General Services, Supervision and Local Office Charges.	7,076	8,464	8,098	5,486	4,404	4,911	7,634	6,011
6. Packing including the cost of drums.	39,880	37,053	62,845	57,519	52,142	50,298	46,764	44,996
7. Miscellaneous, Water, Lighting, Royalties, etc.	3,599	4,468	6,049	7,144	4,652	6,021	5,580	5,964
TOTAL .	1,06,262	1,19,371	1,55,770	1,46,440	1,26,244	1,28,336	1,24,856	1,22,136

Overhead Charges ;—								
8. Depreciation at Statutory Rates.	5,012	5,660	6,628	9,711	Dep. 8,856 Obso. 6,392	8,937	9,791	Dep. 9,266 Obso. 5,791
9. Interest on Working Capital .	12,783	15,460	19,492	18,651	9,006	10,544	13,685	8,593
10. Head Office Establishment, Managing Director and other Administration Charges.	6,220	6,783	8,455	12,606	18,284	21,868	22,936	24,894
11. Directors' and Auditors' Fees .	350	500	450	450	450	450	680	840
12. Insurance	117	117	117	59	148	148	392	450
13. Rents, Rates and Taxes excluding Income-tax and Royalties.	355	338	338	433	516	476	501	623
14. Selling Expenses . . .	12,400	14,056	11,159	27,827	24,475	26,867	25,010	24,823
15. Miscellaneous (including Quota Adjustment Payments).	3,129	2,316	4,188	4,782	11,714	12,458	22,854	20,853
TOTAL .	40,366	45,230	50,827	74,519	79,841	81,748	95,309	96,133
GRAND TOTAL .	1,46,628	1,64,601	2,06,597	2,20,959	2,06,085	2,10,084	2,20,165	2,18,269
CREDIT FOR MATERIALS RECOVERED, IF ANY.	*Nil*	*Nil*	*Nil*	*Nil*	*Nil*	*Nil*	*Nil*	*Nil.*
NET TOTAL .	1,46,628	1,64,601	2,06,597	2,20,959	2,06,085	2,10,084	2,20,165	2,18,269
TOTAL QUANTITY PRODUCED (TONS)	3,273	4,402	5,192	6,755	5,625	5,838	5,365	5,536

Forms I and II as per Tariff Board's Questionnaire, showing total expenditure for Mithapur Factory from 1932 up to 1936.

(See Question 47.)

	1932.	1933.	1934.	1935.	1936.
Manufacturing Expenses .—	Rs.	Rs.	Rs.	Rs.	Rs.
1. Raw Materials	525	4,890	7,417	10,125	183
2. Power and Fuel	2,675	8,464	16,085	11,713	733
3. Ordinary Current Repairs and Maintenance of Buildings, Plant and Machinery.	3,102	3,477	5,650	8,016	2,178
4. Labour	8,697	11,346	11,066	12,458	2,251
5. General Services, Supervision and Local Office Charges.	1,770	4,423	6,572	8,654	675
6. Packing including the cost of drums . .	1,533	10,287	15,399	14,791	1,493
7. Miscellaneous, Water, Lighting, Royalties, etc.	773	1,843	1,218	1,156	10
TOTAL .	19,075	44,730	63,407	66,913	7,523
Overhead Charges :—					
8. Depreciation at Statutory Rates . . .	8,975	10,270	8,630	Obso. 15,504 Dep. 9,474	9,462
9. Interest on Working Capital	*Nil*	9,534	10,596		
10. Managing Agents' Charges	*Nil*	*Nil*	*Nil*	*Nil*	*Nil.*
11. Directors' and Auditors' Fees	75	*Nil*	*Nil*	*Nil*	*Nil.*
12. Insurance	*Nil*	*Nil*	*Nil*	*Nil*	*Nil.*
13. Rents, Rates and Taxes excluding Income-tax and Royalties.	86	75	110	648 734	377 308
14. Selling Expenses	283	2,076	2,914	4,037	2,201
15. Miscellaneous	45	75	55	84	436
TOTAL .	9,464	22,030	22,305	30,841	12,784
GRAND TOTAL .	28,539	66,760	85,712	97,394	20,307
CREDIT FOR MATERIALS RECOVERED, IF ANY . .	*Nil*	*Nil*	*Nil*	*Nil*	*Nil.*
NET TOTAL .	28,539	66,760	85,712	97,394	20,307
TOTAL QUANTITY PRODUCED (TONS)	121	962	1,483	2,025	37

Bombay, the 31st January, 1938.

Re CASE FOR PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY BEFORE THE INDIAN TARIFF BOARD.

BRIEF SUMMARY OF ARGUMENTS.

1. Magnesium Chloride is an integral part of sizing for cloth manufacture and as such of vital importance to the Indian Mill Industry. It is also widely used for flooring along with Magnesite, and may well be called an "Essential" industry of sufficient national importance.

2. Claim is further justified on the ground that it fulfils all the three conditions laid down in paragraph 97 of the Fiscal Commission Report in respect of natural advantages, cheap labour and power supply, a ready market at hand, and last not least, further wide possibilities of Export and future development in many ways.

3. Grant of Protection does not involve any sacrifice at all on the country nor burden on the Consumer or the Industrialist requiring its use, as even the total cost of the material let apart the incidence of taxation due to protective duty, is so INFINITESIMALLY SMALL AND NEGLIGIBLE.

4. There are so many features of the Industry that make it peculiarly adaptable to Indian conditions. Besides there are no imports from Britain or any of its Colonies or Dependencies but only from outside foreign countries, and the continuance of this Industry in a healthy state would be a material advantage to our country and its Industries and its crippling or extinction might leave the Mills entirely dependent upon foreign supplies which would hardly be desirable.

5. The privilege of Protection has not been abused in any way by the Industry but on the contrary as the Millowners themselves will own, every endeavour has been made to give complete satisfaction to them by the stabilisation of prices at the lowest level, and by providing a pure article at their very door at a moment's notice as and when required, thus saving them from many needless charges and short supplies.

6. The Industry has so far shown sufficient innate strength and capacity to stand on its own when the time comes for the Protection to be taken off. But meanwhile more breathing time is required to allow of its further consolidation and expansion to fullest extent by guarding against any threatened dumping from more powerful foreign sources.

7. The Industry has already done everything possible to develop its own resources:—

- (*a*) by increasing production from 1,000 to 10,000 tons in the space of a few years,
- (*b*) by catering to nearly 85 per cent. of the Indian Mill Industry with every possibility of supplying the whole of the country's needs,
- (*c*) by further economy of production,
- (*d*) by export of its surplus production to foreign countries,
- (*e*) by the recovery of important by-products and derivatives commercially so as to make the country more and more self-supporting,
- (*f*) by giving rise to 3 factories in place of one thus paving the way for more for other enterprising people,
- (*g*) by the installation of a well-equipped and up-to-date By-products Plant for Epsom and Potash Salts by persistent research and expert technical advice,
- (*h*) by the possible installation in the near future of a Bromine Plant for intermediate recovery at Mithapur for which all necessary technical data is ready with Mr. Kapilram H. Vakil of the Okha

Salt Works, Ltd., and of which there is only one Factory just now at Palestine in the whole of the British Empire.

8. All this has been achieved and made possible as the direct result of Protection. It necessarily follows therefore that by its abolition or whittling down, all incentive for expansion and development by means of intensive research would be killed, and many people might hesitate to risk new Capital for starting a similar venture elsewhere wherever there may be scope for it, especially as there is no limit to the raw material available in this country.

9. Paragraph 98 of the Fiscal Commission has also been fully met as regards achieving the advantages of a large scale production and meeting the whole of our country's needs *plus* leaving a comfortable margin for foreign export without much difficulty.

10. This Industry has been the means of providing substantial recurring monetary gains to the following:—

(*a*) Government by way of Royalty on the "Bitterns" and other Income-tax and rates and charges paid year after year.

(*b*) The Indian Railways for freight payments amounting to more than a lakh of rupees per annum on inward and outward cargo at one Factory alone.

(*c*) Labour for wages and for technical and other services by way of salaries.

(*d*) Miscellaneous payments amounting to more than a lakh of rupees for purchase of indigenous coal and firewood and for drum-steel-sheets of Indian manufacture.

This is our Industry's humble contribution to our country's resources, and all these advantages would be lost by the languishing or threatening of the Indian Magnesium Chloride Industry due to any reason. This would only be like "Robbing Paul to pay Peter" by the transferring of any gains made by the local Industry from the pockets of our own nationals into those of non-Indian non-British foreign sources.

11. In almost every civilized country of the world the present-day tendency is FOR MOST INTENSIVE EFFORT to make itself more and more self-sufficient and less dependent upon foreign sources for all its essential industrial needs. It is moreover the declared policy of our Indian Government also to safeguard the interests of any of its vital Industries deserving of support, and where an overwhelming case subsists and there is no sacrifice or burden involved on anybody, we submit that the grant of Protection after searching Enquiry by the Tariff Board on merits, must be in the best interests of the country and its Industries.

12. There is sufficient room for further expansion in the following way:—

(*a*) For meeting the greater needs in future of our ever growing Mill Industry whether by addition of looms or double shift working or by greater production of coarser cloth as against finer cloth.

(*b*) For the Handloom Industry and for its 2 million odd looms in India, for which though the need is there, the demand is as yet entirely untapped.

(*c*) For the requirements of the flooring and building trade and for the Railway demand in this country, which source is also still undeveloped, though all over Europe, America, Australia, South Africa, it is widely used for this very purpose.

(*d*) For further expansion of our foreign export trade by a general improvement or by conditions becoming more normal and by removal of the existing trade barriers and exchange restrictions in due course.

(*e*) For any possible new developments and uses as the result of further scientific discoveries which may lead to a visible increase in demand.

Last but not least the country has everything to gain and nothing to lose by the continuance of the present Protection for a further necessary period as the Board may deem fit.

Bombay, the 31st January, 1938.

CLAIM FOR PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

CASE OF THE PIONEER MAGNESIA WORKS, LTD., OF BOMBAY BEFORE THE INDIAN TARIFF BOARD.

56-61. In our opinion the question requires to be carefully considered from the following standpoints:—

(*a*) The nature of the Industry claiming Protection? How far could the Industry be called "Essential" and what is the justification for its existence; and whether there be any "valid grounds for asking the country to incur a sacrifice without any assurance of a compensating advantage in the future?

(*b*) How far is the claim justified in accordance with the requirements of paragraph 97 of the Fiscal Commission's Report?

(*c*) What is the sacrifice involved on the country by the grant of Protection or the burden imposed on any other Industry using Magnesium Chloride? What may be the result of its ultimate crippling or total disappearance from the picture, or alternatively what are the advantages of its continuance?

(*d*) Whether the privilege of Protection has been abused in any way by the Industry seeking an unfair advantage to itself by unwarranted profiteering or exploitation of the consumers to the detriment of the country at large or of any Industry requiring the use of the protected article; and how far would its continued existence be beneficial to our country or to any other indigenous industries?

(*e*) What is the inherent strength of the Protected Industry? How far would it be able to stand up against any possible onslaughts or hidden dangers calculated to threaten its very existence in the future, from far more powerful foreign interests, and what may be the steps required to safeguard against any such contingency?

(*f*) What has the Industry done so far, to develop its own resources or to give rise to any other allied industries, by the recovery of various by-products by means of intensive research and sheer dint of enterpride and persistent effort regardless of heavy outlay or risks and sacrifices involved in doing so much pioneering spade work, and how far should this be deserving of any sympathetic consideration?

(*g*) What has Protection done to the Industry and what may be the probable effects of any total or partial abolition, or alternatively of its continuance in future in present or modified form, and to what extent and for what length of time; and lastly whether it would ever be able to face world competition without the aid of Protection?

(*h*) How far does the Protected Industry satisfy either or both of the conditions laid down in paragraph 98 of the Fiscal Commission's Report, *viz.*:—

(1) that the Industry is one in which the advantages of large scale production can be achieved, and that increasing output would mean economy of production, and

(2) that it is probable that in course of time the whole needs of the country could be supplied by the home production?

Arguments in favour of Protection.

Our case for Protection was first taken up before the Tariff Board in 1925 when it was turned down. Then in 1929 it was again very carefully investigated and Protection granted in 1931-32, which still continues. The question is again referred to the Tariff Board now and in due support of our present claim for Protection to the Magnesium Chloride Industry, we would respectively invite the attention of the Board to the various arguments advanced by us as already reported at pages 58 to 61 of the Second Tariff Board Report of 1929.

We would now amplify this further in the light of certain broad principles above inuntiated upon which our case is based and requires to be carefully considered.

Firstly:—NATURE OF INDUSTRY.

Magnesium Chloride being one of the most important ingredients of sizing in textile Mills, which the Indian Mills cannot do without, we do claim that it may well be called an "ESSENTIAL" Industry to that extent. Moreover as already pointed out Magnesium Chloride is extensively used (if not in India at the present moment, at least in almost all other civilized countries of the West and in America, South Africa, Australia), for purposes of Jointless Composition Flooring and for Stucco and other building work, and even on the Indian Railways for making the basement floors and the flooring of their Railway wagons and compartments to a considerable extent in conjunction with Magnesite. Besides, the Handloom Industry with its 2 million and odd handlooms distributed throughout India is also a great potential user, and might need it very largely, given suitable propaganda and spade work and proper organised effort in the future. The question of any sacrifice or assurance of corresponding advantage will be discussed later.

Secondly:—JUSTIFICATION IN ACCORDANCE WITH PARAGRAPH 97 OF THE FISCAL COMMISSION'S REPORT.

The three main conditions laid down are:—

1. NATURAL ADVANTAGES in respect of abundant supply of raw materials, chief power, sufficient supply of labour and a large home market.

From the material already placed before it, the Board will have noticed that we do fulfil this condition in all its entirety and essentials.

However, if further proof be needed, it may be mentioned that the only raw material needed is "Bitterns" which is a waste product of salt, and so long as Salt continues to be produced in India to the extent of nearly 40 million B. Mds. = 1½ million tons or so per annum, there will never be any dearth of the resulting mother liquor, which must needs be eliminated from the Salt, and is usually to be found in the proportion of about 10 tons of Salt to 1 ton of Magnesium Chloride.

As for cheap power and cheap labour, this is always available at both Factories at a fairly low cost without much difficulty.

Regarding the consumption "Home Market", it may be noticed that the total estimated Indian Mill at present amounts to about 7,000 tons per annum *plus* a couple of thousand tons more for the needs of the Composition Flooring Industry and for use on Railways.

The Mill demand is based on an average consumption of about 3 tons per 100 looms per annum, and since India possesses about 200,000 looms all told working on single or double shift and what with the possibilities in the Handloom Industry, it may not be very difficult to put down the total Indian demand, as above indicated, for which the Industry as now constituted is fully equipped and capable of taking full care and more, not to mention any surplus left for export abroad.

2. HOW FAR IS DEVELOPMENT POSSIBLE without Protection as is desirable in the interests of the country?

3. WHETHER THE INDUSTRY CAN SURVIVE or eventually be able to face world competition without Protection?

The answers to these 2 questions would be given later.

Thirdly:—SACRIFICE INVOLVED BY GRANT OF PROTECTION AND/OR BURDEN PLACED on any other Industry requiring the use of Magnesium Chloride, and the compensating advantages of continuing the Protection.

The only two big industries requiring Magnesium Chloride that need be considered at present are, the Weaving and the Flooring Industry.

As for the former, the total Indian Mill production of cloth during 1936-37 (according to official figures) amounted to 3,571·6 million yards not counting the Handloom production at all. The total estimated Mill demand for Magnesium Chloride may be 6,000 to 7,000 tons per annum as shown above, so that the total cost of this article spread out on the whole of the Mill Industry would work out (as shown below) which may well be called INFINITESIMAL. Moreover looked at from the point of view of the total incidence of taxation also due to prevailing Protection, that too might be called negligible, so that it goes without saying that in our particular case at least PROTECTION DOES NO HARM NOR DOES IT INVOLVE ANY SACRIFICE OR BURDEN ON THE CONSUMER.

(Per annum.)

Total looms, mill, say	Total mill production.	Total cloth value at annas 3 per yard all round.	Probable maximum consumption of Magnesium Chloride in Indian mills.	
	Million yards of cloth.	Rs.	Tons.	Value Rs.
200,000	3,571·6	66,96,75,000	7,000	5,60,000

Total incidence of taxation as at present (about).	Effect of present protective duty on mill production, per loom per 1,000 yard per annum of cloth.	Percentage of duty on cloth value.
Rs. 1,82,000	Re. 1-4·30 or 1/20th of a pie per yard of cloth.	·03

Total annual cost of Magnesium Chloride on Mill production—

Per loom—Rs. 3.

Per 1,000 yds. of cloth—As. 13, *i.e.*, ·15 pies per yard.

It may perhaps be argued that owing to the shrinkage of Magnesium Chloride imports because of the local production, Government loses so much duty, without any compensating advantage. But that is not true. As a matter of fact before the imposition of the prevailing Protective Tariff in order to placatte the Mill Industry, Government had actually placed Magnesium Chloride on the free list along with other chemicals thus foregoing any likely revenue. Besides whatever duty may be collected, would not be of such magnitude or importance as to offset untold advantages to the Government and the country at large.

(*a*) The Royalty earned by Government by the sale of their waste Bitterns to us from the Kharaghoda Salt Works.

(*b*) The income-tax and other rates and taxes amounting to an appreciable figure paid by the Industry into the coffers of Government year after year.

(*c*) The large amounts distributed in the shape of wages and salaries to Indian labour.

(*d*) And last but not least, the big sums amounting almost to a lakh of rupees per annum that is now being spent on Railway freights alone at Kharaghoda upon our inward and outward cargo, not counting the Mithapur Factory and the other equally large amounts paid out for the purchase of fuel and for Indian drum sheets and various other local items at both Factories, over and above the amounts spent by our Kuda friends also for their own requirements.

These we submit may legitimately be called some of THE COMPENSATING ADVANTAGES of the continuance of our indigenous Industry, which would all be lost to the country by its extinction to the lasting benefit of the foreign producer alone.

Fourthly:—The privilege of Protection is liable to be abused by a Protected Industry by exploiting the other Industries using that article, as much as possible, without any corresponding advantage. From the figures given elsewhere the Board will see not only that the existence of our Industry on the present scale has been a great stabilising force and has kept the foreigner away, but that even the Millowners themselves will, as we venture to hope, be our best supporters in that we have never tried to take unfair advantage of our position or to exploit them but have always stood by them and tried to serve them to the best of our ability, by providing A FIRST RATE ARTICLE whenever required at a moment's notice from our stocks at their very door and without the least trouble as to quality or price or shortages, which is no mean advantage. What is more, we have never failed in our contracts and have always maintained prices from year's end to year's end for many past, at an almost steady and uniform level (with hardly an anna or two fluctuation per cwt.) despite any higher costs incurred by us owing to increased fuel or packing charges, and our costs have always been below the level of the imported material. It may not be out of place to give only one instance of what might happen if this wholesome check on foreign exploitation were to be removed by the elimination or throttling of the local Industry. The case of Zinc Chloride another important article of sizing required by the Mill Industry is only an instance in point, to show how the prices have rapidly soared from £13 to £19 per ton in the absence of any local production, and due to the machinations and manipulations of the foreign Syndicates if we may be permitted to say so. This would clearly show how far the continuance of our Industry may be called beneficial or otherwise to our own country?

Fifthly:—The inherent strength of our Industry could be gauged sufficiently from the following:—

1. In place of one small factory there are now three operating in the country.
2. The total Indian production has jumped from 1,000 tons to about 10,000 in 1937.

3. The Magnesium Chloride Industry has in its wake given rise to the production on a commercial basis of so many other allied products and derivatives as enumerated elsewhere, which is no mean advantage to the country's resources.

4. Costs of production have been materially reduced as will be apparent from the given statements.

This has all been due to Protection and it may well be left to the Tariff Board's judgment as to what would have happened or might happen any time if adequate steps be not taken to safeguard this useful and beneficial Industry against all possible dangers or powerful onslaughts in the future from any unforeseen quarter.

As an instance in point, the Board has only to look through our Memorandum to the Government of India in answer to their Questionnaire (separately submitted) for the grant of Protection under the safeguarding of Indian Industries' Act against our threatened extinction as the result of flooding from Japan only very recently at ridiculous rates, and there is no saying when such dumping may not again be resorted to. It has once been attempted by Germany, then by Japan, and now there is another similar potential danger lurking before us and that is from Palestine or the Dead Sea side which can boast of this production in terms of billions of tons for an indefinite period.

Sixthly:—DEVELOPMENT OF EXISTING RESOURCES AND RECOVERY OF BY-PRODUCTS. We have shared no efforts in this direction as will no doubt appear from the increase in production as well as from the recovery of by-products and derivatives obtained from the Bitterns.

By spending thousands of rupees on research work under capable chemists, we have been enabled to eliminate waste, to reduce expenditure, to effect improvements and economy of production and to give back unstingly to the Industry in one shape or other a not inconsiderable portion of our own earnings, and we fully hope that a personal visit of inspection to both our Factories as well as a careful study of our Technical Reports and mass of Evidence produced before the Tariff Board, will go a long way to convince them of the truth of our statements.

Seventhly:—As the Board will see all this has been achieved and made possible because of the Protection granted, and though without Protection our Industry might possibly survive or eke out a miserable existence for some time, the Board will have to consider the possible dangers and the likely effects of its abolition on the Industry, and how far that would leave it in a position to develop its resources as may be desirable and for which it is our firm conviction that there is still an immense scope for future expansion.

To name just a few possibilities of future development, we have only to mention the following to give an idea:—

1. The Mill Industry is still growing and may in course of time require much more than its present annual needs of 7,000 tons.

2. There are about 2 million Handlooms in India and even if we take only half the number, it may be fair to estimate that provided the use could be sufficiently popularised and adequate ways and means found to reach the Handloom Weavers distributed as they are all over the country (which makes it all the more difficult for us, without further intensive organisation or effort), it will mean an additional consumption of at least 5,000 tons more per annum from this source alone which for the moment remains entirely untapped and untouched.

3. Besides, as pointed out and also convincingly shown in the Book entitled "Composition Flooring and Floorlaying" by A. W.

Comber and the Article on "Oxy-Chloride Flooring" (forwarded for the Board's perusal), there is ample scope of development in this direction. But it requires a long long time to take trials or to make any innovations and provided the problem now put by us before the Industrial Research Bureau of the Government Test House at Alipore, Calcutta (Indian Stores Department) comes out successful as we hope it will, then we have an immense vista before us of increasing the use of Magnesium Chloride further in India to the tune of thousands of tons more, to say the least of it.

4. As the Board will have noticed, our Company has already successfully introduced its Magnesium Chloride of Indian manufacture to the markets of Europe for use as Oxy-Chloride Cement alongwith Magnesite, for purposes of Jointless Composition Flooring for which it is so widely required to the extent of several thousand tons per annum. This has not been achieved without sacrifice and a good deal of prolonged effort and spade work on our part in the teeth of powerful keen cut competition from Germany, France and other countries as the London Customs Returns and the Statements furnished, of our Exports to various foreign countries in the past would show. We are proud to say that ours is one of the very few manufactured articles to be exported from India to the West. It may also be mentioned that as far as the Continent is concerned, and judging from our own personal investigations and experience after several visits paid by our Managing Director and other Export Representatives, we have no doubt but that there would be every possibility of sending out much more to Europe but for the stringent export regulations, trade barriers and barter arrangements now in force in most countries; and when the trade gets down to more normal and sea freights and prices of drum sheets, etc., become lower, we are confident of pushing our material abroad to a much larger extent than now. Just now our exports amount on an average to about 2,500 tons annually, but if all goes well, it may not be too much to hope that this quantity might at least be doubled on a modest computation.

We fully realize that Protection cannot go on for ever and that a time must come when the Industry should be sufficiently developed and organized to do without it and to face the world competition without any Protection. But in view of the further possibilities envisaged, and the ill effects of crippling the Industry's resources now by laying it open (without Protection) to the tender mercies of the severest foreign competition, may not be altogather advisable and the only question therefore to consider may be what amount of Protection is needed and up to what period?

Paragraph 98 of the Fiscal Commission's Report.

Judging from the above arguments we claim that our Magnesium Chloride does fully satisfy both the conditions laid down in this paragraph in that—

(1) it is one in which all the advantages of large scale production have been and could be achieved and that increasing output must necessarily mean further economy of production; and

(2) that considering that the Industry does just now supply to the extent of nearly 85 per cent. if not more of the total Indian trade demand, it may well be taken for granted that the whole needs of the country and much more (for foreign export), could be easily provided by the home production under favourable circumstances.

From the foregoing we have no hesitation in declaring that our Industry is of sufficient strength and importance on national grounds and therefore deserves Protection as apart from any economic considerations, for the simple reason that it is an essential and integral part of the Indian Mill Industry and the Flooring Trade and if India is to be self-sufficient without an undue frittering of her existing resources, then it is the primary duty of the Government to see that it does not languish or die out for want of adequate support, and that all possible encouragement and means be provided to enable it to stand on its own legs and to develop to the lasting benefit of the country.

Moreover, committed as our country is to a policy of discriminating Protection, and to the development of all its resources and Industries to the utmost, in view of the arguments advanced in the foregoing paragraphs and the necessity for the existence of a vigorous and healthy intermediate Industry like ours in the best interests of all concerned is supreme, not only with a view to prevent foreign exploitation but also to make our country as self-supporting as possible on various economic and other national grounds.

In our opinion there are very many features of this Industry which make it peculiarly suitable to Indian economic conditions, such as a plentiful supply of raw material, and labour, cheap power and a ready market at hand both for domestic and foreign needs. Besides, no portion of it comes from Britain nor from any Colony or Dependancy, but all from foreign lands.
There are various ways of underselling against which the nascent Industry should be protected, *e.g.*:—

(*a*) by the lowering of c.i.f. costs of foreign material by real or artificial means at Ports of entry,

(*b*) by exchange restrictions and compensation allowances offered to the buyers,

(*c*) by a system of secret rebates,

(*d*) by wrongful shortage allowances given to buyers to compensate for seeming higher import values in the first instance,

(*e*) by offering other allied chemical products to the consumer at a comparatively cheaper rate or by giving them some such advantage to make up for the higher prices charged for the Protected article,

(*f*) by fall clauses, and other bounties or allowances if any.

The nett result in each case is the same, *viz.*, to get over the barriers in order to nullify the good effect of Protection; and provided a sufficiently strong case be made out and the local Industry found worthy of support, it goes without saying that ways and means should be adopted for safeguarding it and stopping its strangulation, which might only mean the transference of earnings from our country's pocket to that of the foreign exploiter without any benefit in return.

The amount of Protection now in force is a specific customs duty at the rate of Rs. 1-5-0 per cwt. or 25 per cent. *ad valorem* whichever be higher, on the imported article.

On the analogy of sea freight and other charges borne by us on our Magnesium Chloride exported outside, the following transport and other charges between the main country of export for the moment, *viz.*, Germany and the main ports of entry, *viz.*, Bombay, Calcutta and those on the Kathiawar Coast, may be taken as a fair index.

(Price per ton—Approximate only.)

	Rs.	A.	P.
F.o.b. country of production, *viz.*, Germany at £3	41	14	0
Sea freight to Indian Ports at 25*s*. . . .	16	11	0
Insurance and trade charges at 5*s* . . .	3	5	6
Landing, clearing and forwarding charges up to Bombay or Calcutta Mill premises and/or f.o.r. Bombay station	6	4	0
Total, *i.e.*, Rs. 3-6-6 per cwt. .	68	2	6
Add prevailing Customs duty of Rs. 1-5-0 per cwt.	26	4	0
Per ton or about Rs. 4-12-0 per cwt. free delivery Bombay or Calcutta Mills or f.o.r. Bombay or Calcutta as the case may be .	95	6	6

Against this our prevailing rate of Rs. 4-4-0 per cwt. free Bombay Mills delivery certainly compares very favourably not counting the disadvantage we have of a long Railway lead of about 400 miles to Bombay from Kharaghoda.

The current Railway freight from Bombay to Ahmedabad comes to As. 8 per B. Md. in wagon loads *plus* town duty of As. 1-6, *i.e.*, altogether As. 12 per cwt.

NOTE.—In the case of the Ahmedabad Mills which are better served from the Kathiawar Ports than from Bombay, all other conditions are more or less the same as above, but for the landing, clearing and forwarding charges and the Railway freights from the main Kathiawar Ports to Ahmedabad, which are much lower.

The prevailing Railway freights to Ahmedabad from the various ports are as under:—

(Town duty and delivery up to Ahmedabad Mills extra.)	Per B. Md.		Per Cwt.	
	As.	P.	As.	P.
From Ports—				
Bhavnagar	7	4	9	11
Navlakhi (Morvi State) . .	5	4	7	3
Port Okha (Baroda State) . .	11	4	13	4
Bombay	8	0	10	10

As to the amount of Protection necessary or advisable, our considered view is that the present prevailing scale should be maintained for another 7 years at least after expiry in March, 1939, in order to give the Magnesium Chloride Industry further breathing time for consolidating its position and carrying out any schemes of expansion and development of new uses, both as regards their main product as also in respect of various other by-products and derivatives, which have emerged successfully from the experimental stage and are already on the market and are just finding their feet. But it will mean still further time and intensive effort and sacrifice on our part to bring these schemes into fruition and we hope and pray that having regard to all the conclusive evidence now given and the overwhelming case made out and considering the present position of our Industry, the Board will come to the right conclusion and grant our request, especially when it involves no sacrifice at all and the burden if any on the consumer or on any other Industry using it, IS ABSOLUTELY INFINITESIMAL.

The ramifications of the Deutche-Chlor-Magnesium Syndikat fully described in the previous report of the Tariff Board are but too well-known and need no further comment. But there is another potential danger

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to be guarded against and that is against exchange manipulations by reason of a highly depreciated currency and a veiled system of bounties in the competing country to stimulate the export trade not to mention any reductions in sea freights favouring the foreign exporters bringing these goods in their own steamers and such like factors. This is very difficult to foresee and leaves us entirely helpless and at the mercy of the foreigner unless our Government has reserve powers or it is provided in the Bill to remedy this defect by quick executive action upon satisfactory proof any time.

We do not think it necessary to recommend just now any form of assistance other than the present Protective duty, excepting for adequate and elastic safeguards to meet any contingency as above indicated.

With these remarks we may safely commend our case to the Tariff Board for their sympathetic attention and for taking any suitable action as they may deem proper or recommend for final adoption.

PROCESS OF MANUFACTURE.

(Reference to Question 10.)

SHORT NOTE BY MR. KAPILRAM H. VAKIL, M.SC., TECH. (MANCH.), B.A., F.I.C., M.I. CHEM.

The process of salt manufacture from brine by solar evaporation is stopped when the brine reaches a density of about 28·5° Bé. The residual liquors generally known as bitterns, are removed from salt pans into secondary condensers and allowed to condense up to 32° Bé. The salts which separate out in these secondary condensers are " mixed salts " containing Sodium Chloride, Magnesium Sulphate, Magnesium Bromide, Potassium Chloride and Magnesium Chloride. A separation of these salts is not easily accomplished. Even after the separation of mixed salts the bitterns of 32° Bé contain in solution all the above salts in fairly good quantities. If the bitterns of 32° Bé are cooled a crop of Magnesium Sulphate separates out in a fairly pure condition and this is the process followed in the recovery of commercial Epsom Salt or Magnesium Sulphate. The bitterns of 32° Bé are further concentrated by solar evaporation or by fuel in special type of evaporators to about 35° Bé and then transferred to boiling kettles and boiled till the right boiling point is reached. The hot liquor is allowed to settle for the separation of mixed salts containing kieserite and Potassium Chloride and the clear hot liquor is filled into drums where it solidifies as a white waxy looking substance. This is the commercial fused magnesium chloride.

If the insoluble kieserite is treated with water for a considerable time the Anhydrous Salt of Magnesium Sulphate results in the formation of a soluble Magnesium Sulphate which on cooling yields the commercial quality of Epsom Salt. If the concentration of bitterns of 32° Bé is carried out in specially designed evaporisers, another mixed salt containing carnallite—a double salt of Magnesium Chloride and Potassium Chloride and kieserite settles out. An economical method of separation of these two salts, *viz.*, carnallite and kieserite is still under investigation. Carnallite when split up with water under regulated conditions gives Potassium Chloride and a solution of Magnesium Chloride. The treatment of carnallite and kieserite for the recovery of Potassium Chloride and Magnesium Sulphate is given in detail in all technical publications describing the Stassfurt process.

Solutions of Magnesium Chloride by a further treatment with alkalies give Magnesium Carbonate and Magnesium Oxide, both of which are of considerable technical importance.

THE OKHA SALT WORKS, LTD.

Kapilram H. Vakil,
M.Sc. Tech. (Manch.), F.I.C., M.I. Chem. E.,
Consulting Chemist,
Chemical Engineer.

Mithapur, J. D. Ry.
Okhamandal (Kathiawad), 1st Feb., 1931.

REPORT OF ANALYSIS.

Samples marked I and II of Refined Salt—Boiled and Solar.

Received from the Pioneer Magnesia Works, Kharaghoda, on 13th December, 1930, the sample was drawn by senders.

Analysis—Refined Salt.

	Boiled Process. Per cent.	Solar Evaporation. Per cent.
Calcium Carbonate ($Ca\ CO_3$) . .	trace	0·030
Calcium Sulphate ($Ca\ SO_4$) . .	0·979	0·939
Magnesium Sulphate ($Mg\ SO_4$) . .	0·165	...
Magnesium Chloride ($Mg\ Cl_2$) . .	...	trace
Potassium Sulphate ($K_2\ SO_4$) . .	0·076	...
Potassium Chloride (KCl) . .	...	trace
Sodium Chloride ($NaCl$)	96·641	98·182
Insoluble	0·027	0·102
Moisture	0·045	0·279

(Sd.) Kapilram H. Vakil.

To

The Pioneer Magnesia Works,
Chartered Bank Building, Bombay.

(Copy.)

GOVERNMENT OF INDIA.

Indian Stores Department.

Government Test House, Alipore, Calcutta.

Issued to Messrs. Trikamlal Mahasukram,
Haja Patel Pole, Ahmedabad.

With reference to letter No. P.-21, dated the 15th April, 1933.

Registered No. 7-P. C., dated the 3rd April, 1933. Test No. 682-C.

Sample Marked "Middle" and "Crude Bitterns".

	Alkalinity in c. cs. of Normal.	
	Magnesium Chloride. Per cent.	Crude Bitterns. Per cent.
Caustic Soda per 100 grms. (using Methly erange an indicater) . .	0·59	2·00
Iron Oxide	...	...
Lime	...	...
Magnesia	19·53	13·32
Sulphuric anhydride	0·19	1·52
Chlorine (as chloride)	34·60	22·90
Alkalies	0·41	1·07

	Alkalinity in c.cs. of Normal.	
	Magnesium Chloride. Per cent.	Crude Bitterns. Per cent.
Probable Composition—		
Magnesium Chloride	45·90	29·64
Magnesium Sulphate	0·29	2·29
Sodium Chloride	0·77	2·02
Water (by difference)	53·04	66·05
	100·00	100·00

The sample of Magnesium Chloride contains 98·0 per cent. of Magnesium Chloride crystalline variety with 6 molecules of water of Crystallisation. The sample of crude Bitterns contains large quantities of Sodium Chloride and Magnesium Sulphate than the sample of Magnesium Chloride and also much water.

(Sd.) N. Brodie,
Superintendent.

Annual Import figures of Foreign Magnesium Chloride at principal Ports in India in quantities and value from 1927 onwards, as per Customs Returns.

BOMBAY.

Year.	Tons.	Value. Rs.	Rate c.i.f. per cwt. Rs.	A.	P.	
1927—						
(Jan.-June)	1,175	86,575	3	10	6	
(July-Dec.)	721	57,747	4	0	0	
1928	1,009	70,987	3	6	2	
1929	1,514	84,515	2	9	6	
1930	1,236	69,609	2	11	5	
1931	1,321	76,582	2	14	4	
1932	612	41,248	3	5	11	
1933	616	37,535	3	0	8	
1934	445	29,856	3	2	3	(German)
			1	8	3	(Japanese)
1935	442	27,846	3	1	1	(German)
			2	7	1	(Maximum Japanese)
			1	8	0	(Minimum Japanese)
1936	330	20,351	3	0	8	

OKHA PORT.

Year.	Tons.	Value. Rs.	Rate c.i.f. per cwt. Rs.	A.	P.
1927		Not available.			
1928	1,388	77,462	2	12	3
1929	1,596	85,998	2	11	1
1930	1,332	70,970	2	10	7
1931	293	15,753	2	10	11
1932	190	12,174	3	7	4
1933	110	7,050	3	3	1
1934	15	910	3	0	8
1935	...	...	...		
1936	...	...	...		
1937	...	...	...		

CALCUTTA.

Year.	Tons.	Value. Rs.	Rate c.i.f. per cwt. Rs. A. P.
1927	Not available.		
1928			
1929			
1930			
1931-32 (Apr.-March)	336	19,442	2 13 6
1932 (Jan.-Dec.)	317	20,609	3 4 0
1933	300	19,643	3 4 4
1934	234	Not available	...
1935	202	11,964	2 14 8 (German) 1 14 4 (Japanese)
1936	290	17,725	2 15 1 (German) 1 13 10 (Japanese)

MADRAS.

Year.	Tons.	Value. Rs.	A.
1927	Not available.		
1928			
1929			
1930			
1931			
1932	109	9,773	0
1933	32	3,603	0
1934	26	2,543	3
1935	22	225	0
1936	17	1,720	0

Comparative Import prices of foreign material at different times.

(Reference to Question 46.)

	Per cwt. Rs.	A.	P.
Prices of imported Magnesium Chloride at Bombay in June, 1937—			
German Product	3	0	0 c.i.f. Bombay.
Add—			
Existing Customs Duty	1	5	0
Landing, clearing charges, etc., up to Mills	0	5	0
	4	10	0
Less Importers' Commission at 5 per cent.	0	3	8
Price of the Imported German material	4	6	4

	Per cwt.		
	Rs.	A.	P.
Price of the imported material prior to England's going off the gold standard in November, 1931—			
German Product, c.i.f. price as per Customs Import Returns	2	10	9
Add—			
Protective duty at old rate of As. 8-9	0	8	9
Dock dues and clearing charges up to Mills	0	5	0
	3	8	6
Less Importer's Commission at 5 per cent.	0	2	10
Price of Imported German material prior to currency fluctuation in England and Continent	3	5	8
Price of the imported Japanese material in September, 1933—			
C.i.f. Import price of Japanese Magnesium Chloride as per Customs Returns	1	9	4
Add—			
The then Customs duty of As. 8-9 per cwt.	0	8	9
Dock dues and clearing charges up to Mills	0	5	0
	2	7	1
Less Importer's Commission at 10 per cent.	0	3	10
Price of Japanese material as laid down at the Mills, Bombay prior to the raising of protection under the Safeguarding of Indian Industries Act, December, 1933	2	3	3
Price of Japanese Magnesium Chloride c.i.f. Indian Port after Protective duty of Rs. 1-5-0 per cwt. in February, 1935—			
C.i.f. price	1	8	0
Add—			
Prevailing Customs Duty	1	5	0
Dock dues and clearing charges up to Mills	0	5	0
	3	2	0
Less Importer's Commission at 10 per cent.	0	5	0
Price of Japanese material in 1935 in spite of enhanced protective duty of Rs. 1-5-0 per cwt.	2	13	0
Price of Japanese material as per Calcutta Import Returns in June, 1936—			
Rate per cwt.	1	14	0
Add—			
Prevailing Customs Duty	1	5	0
Dock dues and clearing charges up to Mills	0	5	0
	3	8	0
Less Importer's Commission at 10 per cent.	0	5	7
Price of the imported Japanese material at Mills in June, 1936, inspite of enhanced protective duty of Rs. 1-5-0 per cwt.	3	2	5

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	Rs.	A.	P.
Price of German material as per Customs Import Returns at Calcutta in May, 1932—			
C.i.f. Import German price	3	0	5
Add—			
The then prevailing protective duty . .	0	8	9
Dock dues and clearing charges up to Mills .	0	5	0
	3	14	2
Less Importer's Commission at 5 per cent. .	0	3	1
Price of German material delivered at Mills in Calcutta	3	11	1
Price of German material at Calcutta in August, 1934—			
C.i.f. Import price	3	0	1
Add—			
Duty	1	5	0
Clearing, etc., up to Mills	0	5	0
	4	10	1
Less Importer's Commission at 5 per cent. .	0	3	8
Mill price at Calcutta	4	6	5

NOTE.—In 1937 more or less the same prices prevailed for the German material in the Calcutta market.

Statement of Railway freights, payable on Magnesium Chloride consignments from Kharaghoda to various destinations.

Name of important Stations.	Distance in Miles from Kharaghoda.	Rate in force for wagon-loads of about 16 tons unit.						Rates in force for loose lots.					
		Per B. Md.			Per cwt.			Per B. Md.			Per cwt.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
(1) Bombay . .	373	0	5	5	0	7	5	0	13	8	1	2	7
(2) Surat . .	206	0	5	9	0	7	10	0	8	7	0	11	8
(3) Broach . .	169	0	5	2	0	7	0	0	7	3	0	9	10
(4) Baroda . .	125	0	4	0	0	5	5	0	5	9	0	7	10
(5) Nadiad . .	92	0	3	4	0	4	6	0	4	3	0	5	10
(6) Ahmedabad .	63	0	3	0	0	4	1	0	3	9	0	5	1
(7) Viramgaum .	23	0	1	8	0	2	3	0	2	5	0	3	3
(8) *Viâ* Wadhwan .	63	0	2	9	0	3	9	0	3	7	0	4	10
(9) Cambay . .	137	0	5	2	0	7	2	0	6	5	0	8	8
(10) Ujjain . .	328	0	8	10	0	12	0	0	12	10	1	1	5
(11) *Viâ* Agra . .	560	0	12	3	1	0	8	1	8	9	2	1	8
(12) Delhi . .	561	0	12	4	1	0	9	1	3	11	1	11	1
(13) Cawnpore . .	767	0	13	11	1	2	11	1	12	7	2	6	10
(14) Indore . .	342	0	9	0	0	12	3	0	13	4	1	2	2
(15) Beawar . .	294	0	8	2	0	11	1	0	13	8	1	2	7
(16) Nagpur . .	657	1	3	2	1	10	1	1	8	8	2	1	7

Railway freights payable by the Pioneer Magnesia Works, Ltd., from works to main markets in India compared with those payable by the Importers.

To Stations.	Indian. From Kharaghoda. Per cwt. Rs. A. P.	Foreign. From Bombay. Per cwt. Rs. A. P.	Remarks.
			These rates are for Wagon-loads only.
Bombay (Dadar)	0 7 5 (350 Miles)	..	For loose lots the Railway freight is much higher, *i.e.* Rs. 1-2-7 per cwt.
Ahmedabad	0 6 2 (68 ,,)	0 12 10	
Sholapur	1 6 7	0 14 10	
Hubli	1 14 8	1 3 6	
Chalisgaon	1 8 3	0 1 11	
Jalgaon	1 5 10	0 13 10	
Akola	1 4 0	1 0 10	
Cawnpore	1 2 11 (766 Miles)	2 2 8 (987 Miles)	
Delhi	1 0 10 (561 ,,)	2 6 6 (842 ,,)	
Indore	0 12 3 (342 ,,)	1 7 5 (475 ,,)	

Inland steamer freights payable on Magnesium Chloride consignments by Pioneer Magnesia Works, Ltd.

To	From Bombay. per ton. Rs. A. P.
Cochin, Calicut and Madras	9 2 0
Calcutta	12 0 0
Rangoon	15 0 0

In each case we incur at Bombay, Dock dues at Rs. 3-12-0 per ton, *plus* clearing charges at Rs. 4 and Insurance at As. 6—Total Rs. 8-2-0 per ton. Similar charges are incurred at the port of destination.

Letter No. 4, dated the 25th January, 1938, from the Pioneer Magnesia Works, Ltd. (Export Department), to the Managing Director, the Pioneer Magnesia Works, Ltd., Fort, Bombay.

Re QUESTIONNAIRE OF THE INDIAN TARIFF BOARD ABOUT CASE FOR PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

Regarding the above Questionnaire issued to us, we beg to submit herewith the following statements with suitable answers to the Questions Nos. 27 and 28, which, as far as our Export Department, is concerned, are the only ones of any importance. They may kindly be forwarded to the Board as you may deem proper.

2. The statements furnished herewith are as follows:—

(A) Export of Magnesium Chloride to foreign countries showing annual quantities, value and average prices realised from 1931 to 1937.

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(B) Export of Magnesium Chloride to the United Kingdom only, showing quantity, value and average prices realised during the years 1931 to 1937.

(C) Export of Magnesium Chloride to different Ports in the United Kingdom showing quantity and average prices realised at each Port during the years 1931 to 1937.

(D) Export of Magnesium Chloride to different Ports other than United Kingdom Ports showing quantity and average prices realised at each Port during the years 1931 to 1937.

(E) Total imports into United Kingdom of Magnesium Chloride from all countries showing names of exporting countries, quantity exported, value, average prices realised and percentage of each country's trade (as per figures supplied by the Statistical Department of His Majesty's Customs and Excise, London) for the years 1934, 1935 and 1936.

(F) Total imports into United Kingdom through different Ports, of Magnesium Chloride from all countries, showing names of exporting countries, quantity exported and average prices realised per ton, during six months from July to December, 1936 (as per figures supplied by the Statistical Department of His Majesty's Customs and Excise, London, at our special request).

3. In support of the claim for protection to the Magnesium Chloride Industry as far as it appertains to our foreign export trade, the following grounds may be urged and brought to the notice of the Tariff Board: -

(*a*) The prosperity and development of any important industry depends to a very large extent upon its possibilities for foreign export over and above the Home trade. This will be apparent from the examples of other civilized countries like Great Britain, Germany and Japan who have made noteworthy strides in this direction and paid the greatest attention to develop their exports by intensive efforts and research, not to mention the beneficial trade regulations and enactments intended to help their local industries and to enable them to minimise their costs and overhead charges, thus giving more and more employment to their own countrymen with consequential benefits too numerous to mention.

(*b*) We first thought of developing our Magnesium Chloride exports in 1929 and as the figures will show, in about 9 years time we have succeeded in exporting up to about 20 per cent. of our present production in the foreign markets, despite very many difficulties and handicaps such as of immense trade barriers, exchange and barter restrictions, and very keen cut competition offered by other more formidable producing countries, as the Customs Returns would show.

(*c*) Given more favourable conditions and the removal of the prevailing restrictions on foreign trade and reasonable reductions in our Sea freights, we have every hope of doubling our exports, so long as our quality and prices continue to be competitive.

4. No matter how low our prime cost of production may be or what efficient organisation we may have, all our efforts in this direction are bound to fail unless there be adequate transport facilities available from the works up to the main consuming markets.

5. Transportation charges constitute a most important item in fixing the selling prices both for domestic as well as for foreign markets, and it may not be out of place here to quote the following extract from an

article marked "Ports and their part in prosperity" appearing in the *Press on 27th December, 1935*:—

> "No country, however, great its natural resources or productive capacity, can hope to make headway in the future race for trade supremacy unless its transport services are organized in regard both to system and cost, on a thoroughly practical national basis and co-ordinated so as best to serve the interests of the Nation's Commerce. The *country that* can deliver its products to the foreign buyer and its imports to the Home consumer at the minimum cost and trouble will always find itself favourably handicapped, whether the going be good or bad."

6. Specially low Sea freights are offered in many countries to stimulate the export trade and to develop the local industries in all possible ways, which facilities unfortunately are non-existent in our own country as will be seen from the following:—

> From 1931 to 1936 an average Steamer freight of 20*s.* to 22*s.* 6*d.* was charged to us on our Magnesium Chloride shipments per ton to the United Kingdom Ports from Bombay or Port Okha, and about 17*s.* 6*d.* to 20*s.* to all other continental ports. But the conference Liners are now demanding for our outward shipments something like 40-45*s.* per ton, which enhances our costs considerably and renders it well nigh impossible for us to hold our own in the foreign markets. It may be interesting to note that against this, the prevailing inward freights from United Kingdom and/or other Continental Ports to India have hardly risen 5*s.* a ton as against 20*s.* or more in the case of outward shipments. This is just to show how the Indian Exporter is at a disadvantage and left at the mercy of the foreign Shipping Companies.

7. Again in the case of Japan, for instance, it may be worth noticing that whereas a freight rate of Rs. 40 (*i.e.*, about £3) per ton was demanded from us on our proposed shipments to Shanghai sometime ago, the Japanese material is brought here at specially reduced rates in their own Liners and even free as bottom cargo, as we have reason to believe. On top of it Japan has the added advantage of heavy depreciation and of any export bounties, which they may be receiving at the hands of their own National Government, and if we are to retain our Export trade, we should be placed on a similar level.

8. Owing to close proximity of Okha Port and in anticipation of all suitable shipping facilities being readily available, our Mithapur Factory was established there especially for export reasons. But unfortunately owing to declining import cargo coming into the Kathiawar Ports year after year, we have been greatly handicapped and are often forced to bring our Magnesium Chloride cargo by country craft to Bombay for shipping on the big Ocean Liners, at considerable additional expense and labour and it goes without saying that unless more economical means of transport to the Overseas markets be devised, a regular export trade on a sufficiently large scale cannot be built up nor maintained to best advantage.

9. The attached Tables will give some idea as to the prevailing trend of our Export market and of the immense possibilities still before us for further development especially in Great Britain and other Continental parts of Switzerland, Austria and Czechoslovakia, etc., where there is further room for pushing our product in competition with Germany, which country is in such close proximity and enjoys many an advantage denied to us.

10. According to our calculations based upon the available data and the information collected, and now before us, the following may be a fair

estimation of the probable consumption of this material mostly for flooring purposes in the European markets, *viz.*:—

Countries.	Approximate yearly consumption.	Domestic production.
	Tons.	Tons.
United Kingdom	6,000	...
France	3,000	3,500
Holland	2,000	...
Switzerland	2,500	...
Czechoslovakia	2,500	...
United States of America . .	40,000	40,000
Australia	2,000	...
Total .	58,000 or thereabouts.	

11. In the United Kingdom, the Indian Magnesium Chloride at present is admitted free under the Ottawa Pact as against the foreign product which pays an import duty of £1 per ton or 25 per cent. *ad valorem* though what may happen under the New Trade Agreement between our country and Britain, is not yet known.

12. In France, as a consequence of some trade convention between England and France in 1909 as we believe, an import duty of 100 per cent. is levied on the Indian product whereas the German Chloride pays only 15 per cent. Besides, owing to devaluation, France is just now in a much better position than we are for her export to the United Kingdom markets.

13. The other Continental markets are more or less "free" but owing to the nearness of Germany to these places and due to other trade and exchange restrictions which we are up against and due to the further long lead and transport difficulties in our way, we are labouring under a great stress as compared with the other competing countries.

14. In the United States of America, there is a tariff of 8 cents. per lb. on Magnesium Chloride equivalent to about 80 per cent. *ad valorem*. Besides the present high freight rates to the United States of America from Bombay would also make it prohibitive for us to export there.

15. Although our Magnesium Chloride has found an entry into the Lancashire Mill Trade, yet looking to the vast number of looms there and their probable large consumption for sizing in proportion to their production and also judging from the figures of German imports into Manchester, we feel that we are not getting a fair share and that there is still room for pushing the Indian Magnesium Chloride there.

The above Notes are sent to you in the hope that the Tariff Board may form some idea of our difficulties as regards foreign exports and that after taking into consideration all circumstances, they may see their way to recommend for us suitable support and protection, which may give us a chance of further development to the ultimate benefit of our country and its Home Industries.

Enclosure Tables A to F.

TABLE A.

Total Export of Pioneer Magnesia Works, Ltd.'s Magnesium Chloride to foreign countries showing Quantity, Value and Average Price Realisations during the years 1931-1937.

Year.	Quantity.	Total c.i.f. value.			Average price realisation, c.i.f. per ton.		
	Tons.	£	s.	d.	£	s.	d.
1931 . .	893	4,063	7	0	4	10	11
1932 . .	2,251	10,659	8	11	4	14	7
1933 . .	1,857	8,191	6	11	4	8	4
1934 . .	2,205	10,055	9	2	4	11	2
1935 . .	2,270	10,020	5	7	4	8	3
1936 . .	1,775	7,785	7	8	4	7	8
1937 . .	2,198	9,438	8	7	4	5	10

TABLE B.

Total Export of Pioneer Magnesia Works, Ltd.'s Magnesium Chloride to United Kingdom only showing Quantity, Value and Average Price Realisations during the years 1931-1937.

Year.	Quantity.	Total c.i.f. value.			Average price realisations, c.i.f. per ton.		
	Tons.	£	s.	d.	£	s.	d.
1931 . .	646	2,943	3	7	4	11	1
1932 . .	1,168	5,944	7	10	5	1	9
1933 . .	763	3,667	15	3	4	16	1
1934 . .	1,319	6,186	13	1	4	13	9
1935 . .	1,421	6,326	14	2	4	9	0
1936 . .	1,287	5,792	2	4	4	10	0
1937 . .	1,406	6,197	7	0	4	8	1

TABLE C.

Exports of Pioneer Magnesia Works, Ltd.'s Magnesium Chloride to different Ports in United Kingdom showing Quantity and Average Price Realisations at each Port during the years 1931-1937.

Ports.	1931.		1932.		1933.		1934.		1935.		1936.		1937.	
	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.
	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.
London . .	349	4 9 3	506	5 1 7	392	4 12 3	788	4 17 9	873	4 12 9	907	4 8 0	1,071	4 9 0
Glasgow. .	36	4 16 9	265	4 16 11	158	4 17 9	199	4 8 7	338	4 10 6	215	4 11 3	220	4 8 3
Manchester .	179	4 12 1	372	5 4 9	147	5 1 2	312	4 17 5	210	4 17 0	144	4 16 8	115	4 16 1
Liverpool .	82	5 5 3	25	5 4 7	5	5 11 6	..	..	..	..	..	..	..	..
Hull . .	..	..	..	..	61	5 0 0	..	..	..	..	21	4 8 7	..	..
Belfast . .	..	..	..	..	..	..	20	6 1 3	..	..	..	..	..	..
Total .	**646**	..	**1,168**	..	**763**	..	**1,319**	..	**1,421**	..	**1,287**	..	**1,406**	..

TABLE D.

Exports of Pioneer Magnesia Works, Ltd.'s Magnesium Chloride to different Ports other than United Kingdom Ports showing Quantity and Average Price Realisations at each Port during the years 1931-1937.

Ports.	1931.		1932.		1933.		1934.		1935.		1936.		1937.	
	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.	Quantity.	Price Realised.
	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.
Rotterdam	323	4 9 11	905	4 0 7	957	4 0 3	749	4 3 0	758	3 17 6	403	3 18 0	619	3 17 11
Copenhagen	..	..	20	5 15 0	21	5 6 9	60	5 9 2	63	5 6 8	43	5 6 8	64	5 6 8
Prague (C.S.R.)	..	..	..	..	..	..	..	..	..	..	64	4 5 11 Hamburg	100	4 7 3 Hamburg
Antwerp	..	..	..	..	19	4 7 3	¾	5 9 6	..	..	..	..	..	..
Hamburg	..	..	61	4 12 3	48	4 18 0	20	4 5 0	..	..	..	..	..	..
Trieste	..	..	..	..	20	4 5 0	..	..	..	..	10	5 0 0	2	7 9 0
Genoa	..	..	..	..	..	..	½	6 6 1	..	..	..	..	..	..
Taipeh	1	8 10 0	..	..	..	..	..	..	..	..	..	..	..	..
Gdynia	..	..	..	..	..	..	19	6 11 1	..	..	..	..	..	..
Riga	..	..	..	..	..	..	20	5 4 3	..	..	..	..	..	..
Havre	20	4 19 5	..	..	..	..	1	5 13 5	..	..	..	..	..	..
Oslo	..	..	81	6 15 7	..	..	..	..	..	..	..	..	..	..
Malmoe	..	..	..	..	¼	5 4 6	..	..	..	..	..	..	..	..
Tallinn	..	..	..	..	..	..	..	..	21	5 7 7	..	..	..	..
Piraeus	..	..	..	..	..	..	..	..	5	6 12 0	..	..	..	..
Montreal	..	..	..	..	..	..	..	..	..	..	..	..	2	7 9 0
Durban	..	..	..	..	10	7 12 0	..	..	..	..	..	..	..	..
Capetown	..	..	5	6 18 10	5	7 12 0	..	..	..	..	..	..	..	..
Shanghai	..	..	..	..	3	7 0 0	..	..	..	..	..	..	..	..
Melbourne	..	..	..	..	5	7 0 8	5	7 10 4	..	..	5	5 17 4	5	6 10 0
Sydney	..	..	9	7 2 11	..	..	..	..	..	..	..	..	..	..
Adelaide	..	..	..	..	..	..	5	7 10 3	..	..	..	..	..	..

TABLE E.

Total Imports of Magnesium Chloride into United Kingdom from foreign countries showing name of Exporting Country, Quantity, Value, Average Price Realisations and Percentage of each Country's Trade (as per figures supplied by the Statistical Department of His Majesty's Customs and Excise, London, for the period 1934-1937.

Countries.	1934.					1935.				
	Quantity.	Per cent.	Value.	Per cent.	Average price per ton.	Quantity.	Per cent.	Value.	Per cent.	Average price per ton.
	Tons.		£		£ s. d.	Tons.		£		£ s. d.
India	1,193	23·4	5,670	27	4 15 0	1,403	23·4	6,668	28·4	4 15 0
Germany	3,799	74·6	14,727	70·4	4 1 8	3,830	65·2	14,049	60·7	3 15 0
France	..	..	..	..	..	502	8·7	1,976	8·7	3 18 6
Other Countries	94	2·0	563	2·6	6 0 0	138	2·7	438	1·8	3 3 0
Total	5,086	100	20,960	100	..	5,873	100	23,131	100	..

Countries.	1936.					1937 (From January to October).				
India	1,396	22	6,361	23·8	4 11 1	1,071	22·5	4,857	21·7	4 10 8
Germany	3,636	57·2	13,486	50·5	3 14 2	2,454	51·6	8,748	39·2	3 11 3
France	1,244	19·6	4,630	17·4	3 4 5	1,287	25·9	7,159	32·1	5 11 3
Other Countries	76	1·2	2,224	8·3	29 5 3	93	2	1,576	7	16 19 0
Total	6,352	100	26·701	100	..	4,905	100	22,340	100	..

NOTE.—1937 figures for November-December are not yet to hand.

TABLE F.

Imports of Magnesium Chloride into United Kingdom through different Ports together with the name of the Exporting Country showing Quantity and Average Price Realisations per ton for the six months from July to December, 1936, as per figures supplied by the Statistical Department of His Majesty's Customs and Excise, London.

Name of the Exporting Country.	London.		Glasgow.		Manchester.		Liverpool.		Hull.		Dundee.		Newport Mon.		Southampton.	
	Quantity.	Average price.	Quantity.	Average price.	Quantity.	Average price.	Quantity.	Average price.	Quantity.	Average price.	Quantity.	Average price.	Quantity.	Average price.	Quantity.	Average price.
	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£ s. d.	Tons.	£	Tons.	£ s. d.	Tons.	£ s.	Tons.	£	Tons.	£ s.
India .	637	4 8 0	85	4 13 10	80	5 2 0	..	..	21	4 9 6	..	..	..	..	..	..
Germany .	837	4 4 0	183	3 12 0	1,100	3 11 7	..	..	180	3 6 0	10	3 16	2	4	20	4 13
France .	201	3 18 3	35	4 0 0	139	2 19 8	35	4	29	3 3 5	..	..	..	..	..	..
Other Countries.	44	42 15 5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total for six months.	1,719	..	303	..	1,319	..	35	..	230	..	10	..	2	..	20	..

(6) *Letter dated the 22nd February, 1938.*

Re TARIFF BOARD ENQUIRY INTO CASE FOR PROTECTION OF THE INDIAN MAGNESIUM CHLORIDE INDUSTRY.

Further to our written representation in answer to the Board's Questionnaire, we beg to forward herewith for information copies of our to-day's letters to the Superintending Engineer, Public Works Department, Bombay, and to the Superintendent, Government Test House, Alipore, Calcutta, which will speak for themselves.

It may be observed that Magnesium Chloride could also be used for the purpose of road watering and laying of dust which through oversight remained to be mentioned in our previous representation under consideration. But to develop this on a sufficiently wide scale would mean further intensive research and propaganda and provided the present results are satisfactory and hopeful there are further immense possibilities for expansion.

We are therefore vigorously pursuing this matter as well as the other problem about popularising the use of this material as an Oxy-Chloride Cement in India for Jointless Composition Flooring, with the help of the Government Test House, Calcutta (Indian Stores Department).

Trusting this will have the due consideration of the Board in connection with the present Enquiry.

(Copy.)

THE PIONEER MAGNESIA WORKS, LTD.

Chartered Bank Building,
Fort,
Bombay, the 22nd February, 1938.

Re MAGNESIUM CHLORIDE SUPPLIED TO EXECUTIVE ENGINEER, SURAT, FOR ROAD WATERING.

Dear Mr. Tyabji,

With reference to the 2 wagons recently supplied by us, we should feel grateful if you would kindly request your Executive Engineer at Surat to supply us with his full details and report as to the results achieved in this connection.

A further quantity of 10 tons was also lately supplied for a similar purpose to your Kaira Sub-Divisional Officer at Nadiad and we would much appreciate if you could kindly get us his report also.

Thanking you for the trouble.

Yours sincerely,
(Sd.) B. S. Lalkaka.

S B. Tyabji, Esq.,
Superintending Engineer,
Public Works Department, Bombay.

Copy of a letter dated the 22nd February, 1938, from the Managing Director, the Pioneer Magnesia Works, Ltd., Bombay, to the Superintendent, Government Test House, Calcutta.

Re USE OF MAGNESIUM CHLORIDE FOR JOINTLESS FLOORING COMPOSITION.

It is more than a year since this enquiry was entrusted to you and we are still without any definite communication as to how the experiments are going on, and when any results could be expected.

As you may probably be aware, the Tariff Board are just now holding an Enquiry into the case for Protection of the Indian Magnesium Chloride Industry and are also coming next week on an official visit to both our Works at Kharaghoda and Mithapur (near Port Okha); and although a suitable written representation has already been made, the *viva voce* examination of the parties concerned would also soon begin. It would therefore help our case considerably if whilst this Enquiry be on, we could possibly have the benefit of your Report in this regard, which might throw a flood of light on the question, and we should feel very grateful if on receipt of this letter, you would be so kind as to let us know how the matter stands and whether the results so far achieved could be called hopeful or otherwise and when the full report may be expected in our hands?

Requesting the favour of a line in reply.

Copy of a letter dated the 22nd February, 1938, from the Managing Director, the Pioneer Magnesia Works, Ltd., Bombay, to the Superintendent, Government Test House, Calcutta.

Re USE OF MAGNESIUM CHLORIDE FOR ROAD-WATERING PURPOSES.

We beg to inform you that only during the current month, at the request of the Superintending Engineer, Public Works Department, Bombay, we had occasion to supply 2 wagon loads of this material to the Executive Engineer, Surat Division and a further 10 tons or so to the Sub-Divisional Officer, Kaira at Nadiad in Gujarat, for road-watering and laying of dust. The results are duly awaited.

But meanwhile with a view to take up this matter more seriously as a business proposition and so as to further widen its use, it occurs to us that perhaps your Department may be helpful by undertaking this inquiry on a suitable scale at our expense and on our behalf, and we should like to hear your views and suggestions in the matter. Upon receipt of your reply we shall be glad to do the needful.

Awaiting the favour of a line in reply at early convenience.

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(7) *Letter dated the 15th March, 1938, from the Pioneer Magnesia Works, Ltd., Bombay.*

Re CASE FOR PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

You desired to have certain further information and supplementary statements in this regard. These are submitted herewith in triplicate as detailed below which I trust will be of use.

Enclosures—

(1) Import price of Magnesium Carbonate.
(2) Import prices of Epsom Salt (German).
(3) Government Royalty Payment.
(4) Purchase price of galvanized and black steel sheets for drum making at both factories.
(5) Details of miscellaneous charges incurred in cost figure statements (for private information only).
(6) Kharaghoda Epsom Salt cost figures for private information only).
(7) Kharaghoda production and cost figures for 1937 (for private information only).

THE PIONEER MAGNESIA WORKS, LTD.

Chartered Bank Building,
Fort, Bombay, 1,

15th March, 1938.

Re CASE FOR PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

Further particulars as required by the President of the Tariff Board.

I. Import price of Magnesium Carbonate: Japanese material as per average Bazaar prices in 1937—

	Price per Cwt. Rs.	A.	
Cost of material	11	0	c.i.f. Bombay.
(Revenue) Duty at 25 per cent	2	12	
Dock dues, clearing charges and delivery up to godown	0	8	
Total	14	4	Bombay godown delivery.

Import prices from other foreign sources in Europe are difficult to obtain owing to these imports being lumped together under one heading of Magnesium Compounds. But presumably these would be much higher than the Japanese product.

II. Import prices of Epsom Salt (German) are:—

Years.	Per Cwt. Rs.	A.	P.	
December, 1935	2	1	4	c.i.f. Bombay.
July, 1936	3	14	10	,, ,,
June, 1937	4	0	10	,, ,,
January, 1938	4	13	3	,, ,,

To these may be added about As. 8 extra per cwt. for covering Dock and landing, clearing and forwarding charges up to Mills in Bombay.

III. Figures of Royalty paid to Government on Magnesium Chloride despatches from Kharaghoda are as under:—

Years.	Rs.
1929	3,485
1930	4,291
1931	5,348
1932	6,618
1933	4,622
1934	5,950
1935	5,530
1936	5,910
1937	5,872
Total	47,624

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IV. Purchase prices paid by the Pioneer Magnesia Works, Ltd., for Galvanised and Black Steel Sheets required for drum-making at both Factories—

Plain Galvanised Sheets (for Kharaghoda).

	F.o.r. Kharaghoda. Rs. Per ton.
September, 1935—	
74″ × 39″	225
96″ × 24″	212
72″ × 36″	204
72″ × 24″	204
July, 1936—	
96″ × 24″	235
72″ × 36″	220
72″ × 24″	217

During 1937 owing to abnormal rise in zinc sheets purchases had to be made in the local market at varying rates averaging about Rs. 250 per ton f.o.r. Kharaghoda for Galvanised Sheets.

Plain Galvanised Sheets (for Okha).

	C.i.f. Okha. Per ton. Rs.
January, 1938—	
71″ × 33″, 24 B. G.	298
24″ × 24″, 28 B. G.	342

Plain Mild Black Steel Sheets (Ungalvanised).

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	C.i.f. Okha. Per ton. Rs.
24 B. G.	182
26 B. G.	189

Plus Rs. 10 per ton for drums quality and Rs. 5 per ton for transhipment, *i.e.*, Rs. 197 and Rs. 204 respectively.

N.B.—All the above sheets are bought from the Tata Iron and Steel Co., Ltd., of Jamshedpur.

As a rule, Kharaghoda Factory uses mostly galvanised sheets as per following particulars:—

Capacity—8 cwts. or 2½ drums to a ton.

Size of drum—Height 38½″ × Diameter 23½″.

These are meant more or less for Indian Mill consumption. The Mills insist on galvanised sheets in preference to black steel drums. On the other hand the Mithapur Factory, which was primarily put up for Exports, requires mainly black steel sheets as the foreign importers prefer them to galvanised packing on which there is a certain duty payable in Europe.

Roughly speaking, on a total production of about 6,000 tons at Kharaghoda, we would need annually about 150 tons of plain galvanised sheets of about 27 S. G. and at Mithapur for about 3/4,000 tons. We would require about 100 tons of black steel sheets of 24 S. G.

(8) *Letter dated the 25th March, 1938, from the Pioneer Magnesia Works, Bombay.*

Re CASE FOR PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

In the course of our Oral Evidence on the 17th instant, the Board had desired us to furnish some further particulars and statements as under:—

(*a*) Our Magnesium Chloride sales from 1929 to 1937.

(*b*) Details of items shown in the forms under Head 10, *viz.*, Head Office, Managing Director and other Administration charges (for private information only).

(*c*) Details of items under Head 14, *viz.*, selling expenses (for private information only).

(*d*) Approximate idea of replacement costs of putting up a new and up-to-date plant for Magnesium Chloride at Kharaghoda.

(*e*) Mithapur Factory costs of Magnesium Chloride for the year 1937 (for private information only).

(*f*) Copies of latest Customs Returns and of Quotations for Japanese Magnesium Chloride.

(*g*) Copy of Extract from Lloyd's Register, London, regarding free importation of foreign Magnesium Chloride into Great Britain for shipbuilding purposes.

These are submitted herewith as required. Our latest Balance Sheet for 1937 is unfortunately still incomplete and under preparation and cannot be sent.

We are also enclosing the following 3 letters (in original along with 2 duplicates) received from our foreign Agents in Europe which will speak for themselves and would show what keen competition we are up against:—

(*a*) From Messrs. A. Elder Reed & Co., Ltd., of London, dated the 15th February, 1938.

(*b*) From Messrs. R. D. Stokvis & Zonen of Rotterdam, dated the 24th February, 1938.

(*c*) From Messrs. G. Maitre of Paris, dated the 3rd March, 1938.

As the originals are from the file, they may kindly be returned after perusal for our record.

The price of the lowest imported material from Japan shows as under:—

Rs.	A.	P.	
1	8	6	As per Bombay Customs Returns and Quotations already submitted, *i.e.*, at £2-6-0 per ton c.i.f. Bombay basis.
0	5	0	*Add* for Port dues, handling and delivery up to Mills in Bombay.
1	13	6	Free Bombay Mill delivery.

Apart from any strong reasons already put forward in our Written Evidence, the above price is also subject to various other considerations like, any secret rebates, selling commissions, exchange allowances or preferences to customers in one shape or other (by the giving of some other product at a more favourable figure), so as to offset any seeming advantages enjoyed by the protected Industry and it was on that account that we had ventured to suggest in our representation that in our humble opinion the amount of protection needed for a sufficiently long period should be on the present prevailing basis of Rs. 1-5 per cwt.; and we trust that the Board would also see the necessity of further providing some adequate safeguards against any nullification by dubious means of the Protection given, by foreign interests, during the Protection period.

(A) *Magnesium Chloride sale figures of the Pioneer Magnesia Works, Ltd., from 1929 to 1937 (for Kharaghoda and Mithapur).*

Years.	Tons.	Sales Realization. Rs.
1929	3,495	2,26,074
1930	4,349	2,54,386
1931	5,310	3,43,175
1932	6,850	4,04,839
1933	5,682	4,33,384
1934	6,997	5,30,023
1935	7,733	5,95,240
1936	7,155	5,57,040
1937	7,892	6,11,270

NOTE.—The above are gross realizations inclusive of Railway freights and free deliveries in the case of Bombay and Ahmedabad and free delivery at various other destinations or f.o.r. works according to circumstances. It has not been found possible to differentiate the various charges without much trouble or careful scrutiny.

(D) *Estimated rough costs of erecting a New Magnesium Chloride Factory at Kharaghoda for an annual output of about 5,000 to 6,000 tons.*

The costs given below are purely hypothetical without going into full details or taking into account the costs of investigations regarding the development of the process and plant, which has been evolved after years of research and heavy outlay for the purpose of meeting the necessary alterations from time to time, not to mention the losses due to quality and low realizations in output and price in the earlier stages of the Industry which was entirely new to India.

A plant of this nature cannot be set up off-hand without valuable "data" and experience which must needs be acquired at a heavy cost or paid for in one shape or other.

In preparing the estimates, we have also to consider the question of setting aside the present design and machinery lay-out that may in our opinion be found obsolete, and as a matter of fact our original plant has already undergone much change in the light of all the valuable information obtained and the experience gained not only as regards design and lay-out but also in regard to the right type of construction materials and special mechanical handling devices which would enable us to obtain a high-grade product at lower costs of production.

Subject to these observations we may estimate the costs as under:—

(Approximate only.)

	Rs.	Rs.
I. Land	...	25,000
II. Buildings—		
(*a*) Power and Process House	50,000	
(*b*) Quarters for Officers, Mechanics and general staff	20,000	
(*c*) Offices, Stores, Laboratory and Machine Shop	15,000	
(*d*) Labour Quarters	15,000	
(*e*) Drum Factory	10,000	
(*f*) General Sanitation, water, lighting, roads dispensary and other amenities	15,000	
		1,25,000
Carried over	...	...

	Rs.	Rs.
Brought forward .	...	...
III. Plant and Machinery—		
(*a*) Power plant	15,000	
(*b*) Bitterns reservoirs, pumps, piping, etc. .	15,000	
(*c*) Wagons, bitterns tanks and other auxiliary lay-out for economical handling and transport of the raw material from the salt works to the Factory . . .	25,000	
(*d*) Boiling kettles, pre-heaters, settlers and other auxiliaries	25,000	
(*e*) Electric motors, pumps, wiring, etc. .	5,000	
(*f*) Handling and Workshop Machinery .	7,000	
		92,000
IV. Drum making Machinery and Welding Plant, etc.	...	20,000
V. Railway Siding, Compound Walls and Trolley line, etc.	...	18,000
Total .	...	2,80,000
Plus for contingencies, etc.	...	20,000
Grand Total .	...	3,00,000

SUMMARY.

	Rs.
1. Land	25,000
2. Buildings	1,25,000
3. Plant and Machinery	92,000
4. Drum making plant	20,000
5. Railway sidings, compound walls, trolley line, etc.	18,000
6. For sundries and other contingencies . .	20,000
Total .	3,00,000

(F) *Statement showing the quantities and value of Magnesium Chloride imported into Bombay from foreign countries during the month of February, 1938, forwarded to the Secretary, Pioneer Magnesia Works, Chartered Bank Building, Bombay.*

Country whence consigned.	Quantity. Cwt.	Value. Rs.	Rate per Cwt. Rs. A. P.
Germany	203	646	3 3 0
France	200	585	2 14 9
Total .	403	1,231	

New Custom House,
Statistical Branch,
Bombay, the 15th March, 1938.

(Sd.)
Assistant Collector of Customs
for Statistics.

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(G) *Extract from Lloyd's Import Duties List, London, November 24, 1937, page 6.*

EXEMPTION OF GOODS FOR SHIPBUILDING YARDS.

The following is an extract from the Import Duties Act, 1932:—

Section 11.—(1) Where goods imported into the United Kingdom are consigned direct to a registered shipbuilding yard within the meaning of this section, the Commissioners may, subject to such conditions as they may impose for securing that the goods are used for the building, repairing or refitting of ships in that yard, allow the goods to be imported free of any duty chargeable under this Part of this Act.

(2) Where goods are brought into any such registered shipbuilding yard from any other part of the United Kingdom, the Commissioners may, subject to such conditions as aforesaid, treat the goods for the purpose of the provisions of this Act relating to drawback as if they had been exported from the United Kingdom.

(3) The Commissioners, if it is shown to their satisfaction that any premises in the United Kingdom are occupied and used for the purpose of the building, repairing or refitting of ships shall, on an application made to them in that behalf and on payment by the applicant of a fee of one pound, register those premises for the purposes of this section as a shipbuilding yard, and the expression " registered shipbuilding yard " in this section means premises so registered. (See also paragraph xxxi for exemption of goods for certain shipbuilding purposes.)

Copy of a letter received from Messrs. A. Elder Reed & Co., London.

15th February, 1938.

Dear Sirs,

We have for acknowledgment your various letters of the 21st January to the 7th February for which we are obliged.

Re *Magnesium Chloride Competition.*—Reviewing the situation again regarding the position of Magnesium Chloride, as you know, for some time the Agents here for the French manufacturers have been offering this material at £4-10 per ton delivered consumer's work in 5 ton lots less a 2½ per cent. discount for payment within 14 days, reducing the selling price to £4-7-9 per ton.

The French have had the market to themselves recently but to our horror we find the German Syndicate now making special offers to certain of our best constomers, *i.e.*, Marbolith, Linolite and Doloment at the same price, *i.e.*, £4-10 less 2½ per cent. per ton delivered.

As you know, you are giving us a special allowance of 5/- per ton for all tonnage supplied to Marbolith and Doloment which reduces your cost price to us at just under £4-8 per ton *ex*-wharf, and by the time we pay 5/- per ton cartage the figure is £4-13 per ton net. On this we have to allow 2½ per cent. discount making our cost price about £4-15-6 delivered. You can thus see that our cost price to-day is higher by 5/6*d.* per ton, than our opposition''s selling price to our customers.

In fact, Marbolith rang us through this morning informing us that whereas they have been favouring us with their orders recently, on account of our opposition offering at such low prices, unless we are prepared to compete, they will be compelled to place their orders either with the French or German Agents.

We have been staving them off from taking this plunge for some time, promising that we would give them a further credit note on all their tonnage since the severe competition has come about and therefore you can quite understand how we feel in the matter and it is useless our attempting to sell higher than our opposition. Under the circumstances we are afraid that we shall have to meet the competition which will mean a very severe loss to us on all the tonnage of Magnesium Chloride that we still have in stock to sell.

We find that we have about 400 tons actually in stock from your various shipments, 340 tons of which we have not yet taken up from the Bank.

Naturally we fully realize that whilst this severe price war between the German and French manufacturers continues, it is useless for us to enter into the fight and make offers even at the same price at which they are offering, because we can see a dead loss even if we get the order.

Therefore we continue the policy of concentrating on our own customers appealing to their goodwill towards us, and so far we think we have been successful, but we have to be reasonable and use our own common sense to know that this will not continue for much longer, however friendly we are with those concerned.

In view of the foregoing circumstances you can fully realise that we do not like committing ourselves for any tonnage for any length of time as we do not know what the next move is going to be.

It is quite within the realms of possibility that prices will get even lower and we think that discretion is the better part of valour, being far better to keep out of the fight, letting them have these particular customers at the low price until such times as they come to a sensible conclusion that they must be losing money heavily.

We have been looking into the possibilities of future business and it appears that we have sufficient stock of Magnesium Chloride to last us up to June or July, and therefore it is the second half of this year that we must discuss with you.

In your letter of the 2nd instant, you advise us that the freight rate is 35/- to 40/- per ton an it certainly looks to us that this will make business almost impossible. It does occur to us that you should immediately get in touch with the Steamship Company and ascertain what rate they would consider for say 300 tons in 100 ton lots from June onwards.

This would help you to come to a conclusion as to what price you can quote, especially in view of the very severe competition now existing.

Yours faithfully,
(Sd.) A. E Reed

Telegram Address:
Metallicus Rotterdam.

N V. Handelmaatschappu.
R. S. Stokis & Zonen
Chemische Afdeling.

Rotterdam, Westzeedijk,

C. M.

February, 24, 1938.

Messrs. The Pioneer Magnesia Works,
67, Hamam Street, Fort,
Bombay.

Dear Sirs,

We herewith confirm our cable dated February 21, reading decoded as follows:—

"Please quote lowest price 400 tons Magnesium Chloride in one lot Telegraph" in answer to which we received your following cable:—

> "As per your cable of 21st we quote £4-10 c.i.f. can probably no better with firm offer in hand from you chiefly owing to very unsettled freight market please telegraph immediately."

We inform you that we received an enquiry from the Dutch Railways for mixing of 325 tons of Chloride of Magnesium with 325 tons of Chloride of Sodium. We have fixed our price for this mixture based on you price of £4-10 per ton for the Chloride of Magnesium and in case we are able to obtain the order from the Dutch Railways, we will immediately cable you regarding the quantity to be shipped.

We are,

Yours faithfully,

N. V. Handelmy, R. S. Stokvis & Zonen.

(Sd.)

for J. P. M. Casie.

(Copy.)

G Maitre.

19, Rue Des Batignolles,
Paris, 3rd March, 1938.

Messrs. Purshotamdass Popatlal & Co.,
37, Hammam Street.
Bombay.

Dear Sirs,

I am much indebted to you for your letter of 4th ultimo, which was delivered to me a week ago. Your brochure and sample also reached me safely.

I did not reply to you earlier, because I wanted to make a serious enquiry into the possibilities of introducing your Chloride of Magnesium in French markets, but I am sorry to say that all the results of that enquiry show that such business is positively impracticable.

Question of import duty does not seem to have as much importance as you attach to it in your letter, but all the same, French Chloride of Magnesium is sold so cheap here that your material cannot compete with it.

Take the "solid fused" for example. It is offered to-day in Paris at francs 853 per ton of 20 cwts., packed in air-tight iron drums, *packing free.*

For solid fused chloride coming from India, that same price of 853 francs ought to include:—

	Francs.
(1) Import duty of 150 francs per ton, *on the gross weight*, making out, per ton, about . .	220
(2) Transport by water (cheapest way) from sea-port Havre to Paris, per ton	180
(3) Government tax of 8 per cent on all commercial transactions realised in France, about .	60
(4) Broker's commission and sundries, at least 3 per cent.	25
Total .	485

Leaving only francs 368, at to-day's rate of exchange = £2-9-0 for the cost c.i.f. Havre.

On the other hand French Chloride of Magnesium (solid fused) is sold to-day in London under £4-10 per ton, after paying £1 per ton of import duty.

Other Indian products in which I am interested is "Calcined Magnesite" (not crude) and minerals, like Cobalt Ore.

In case you do not deal yourselves in such products, perhaps you will be kind enough to put me in contact with some other reliable firms who may be interested in them.

Thanking you.

Your faithfully,
(Sd.) G. Maitre.

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(9) *Test Certificate forwarded by the Pioneer Magnesia Works, Bombay.*

Government Test House,
Alipore, Calcutta.

Indian Stores Department, Government Test House, Test Certificate No. 3753-C.M., dated Alipore, the 4th March, 1938.

Messrs. The Pioneer Magnesia Works, Ltd.,
Chartered Bank Building, Fort, Bombay.

With reference to letter No. , dated the
Reg. No. 488-P. C., dated the 6th November, 1937.

Sample received on—
One sample of Magnesium Chloride,
One sample of Magnesium Oxide, and
One sample of Marble Powder.

The above samples were received under cover of the firm's letters, dated the 2nd June, 1937, and 21st December, 1936, respectively.

As requested, a Magnesium Chloride solution of 22° Beaume strength was prepared with the above sample of Magnesium Chloride and the solution thus prepared was used for tests.

Setting time, tensile, soundness and expansion tests were initially carried out on the above sample of Magnesia and the above solution of Magnesium Chloride to determine their suitability for use as building materials.

Owing to the poor results obtained from the above tests, it was decided to analyse the above samples of Magnesium Oxide and Magnesium Chloride prior to further tests:—

The results of tests, so far carried out, and the analyses of the sample of Magnesia and Magnesium Chloride are given below:—

I. *Setting time tests.*—The results of setting time tests on the following setting time pats, gauged generally in accordance with the requirements of B. S. Specification No. 12—1931 for Portland Cement are given below:

Serial No.	Description.	Setting time.			
		Initial.		Final.	
		Hr.	Min.	Hr.	Min.
1.	A setting pat gauged with the above sample of Magnesia and the above solution of Magnesium Chloride . .	20	0	78	0

Serial No.	Description.	Setting time.			
		Initial.		Final.	
		Hr.	Min.	Hr.	Min.
2.	A setting time pat gauged with a sample of Merck's Magnesia (stated to be 100 per cent. pure) and the above solution of Magnesium Chloride	4	10	22	0
3	A setting time pat gauged with the above sample of Magnesia after dehydration at 800° C. and the above solution of Magnesium Chloride .	2	25	22	0
4	A setting time pat gauged with the above sample of Merck's Magnesia after dehydration at 800° C. and the above solution of Magnesium Chloride	2	20	3	10

II. *Tensile test.*—British Standard tensile briquettes were gauged from mortars prepared by mixing the above sample of Magnesia and the above sample of Marble Powder in the proportion of 1 : 1, 1 : 3 and 1 : 5 respectively by weight, using the above solution of Magnesium Chloride in each case. The test briquettes were matured throughout in air under normal atmospheric conditions prevailing inside the test room. The results of tensile tests on the above briquettes are given below:—

Serial No.	Description.	Proportion by weight.	Tensile strength in pounds per square inch (Average of six tests in each case).				Remarks.
			3 days.	7 days.	28 days.	3 months.	
1	British Standard tensile briquettes gauged with the above samples of magnesia and marble powder using the above solution of Magnesium Chloride of 22° Beaume strength.	1 : 1	13	17	30	27	The briquettes had not set hard on the 28th pay. Cracks, which were first observed after two months developed with age. The approximate linear expansion after 3 months was 12·5 per cent.
2	Ditto .	1 : 3	13	18	11	121	The briquettes had not set hard on the 28th day. The linear expansion after 3 months was approximately 5 per cent.
3	Ditto .	1 : 5	10	12	4	22	The briquettes had not set hard on the 28th day. The linear expansion after 3 months was approximately 3·5 per cent.

III. *Soundness test.*—Soundness test was carried out on a pat gauged with the above sample of Magnesia and the above solution of Magnesium Chloride in Le. Chatelier moulds in accordance with the method laid down in B. S. Specification No. 12—1931, and the expansion was found to be 63 mm.

Another pat similarly gauged was kept in air for a period of 82 days, and the expansion was noted periodically.

The results are given below:—

Period in days after gauging.	Expansion in mm.	Remarks.
1	½	
7	6	
11	11	
15	12½	
20	14	
30	20	
40	26	shewed signs of cracking.
45	29	
60	38	
65	43	
70	48	
80	55	very badly cracked.
82	disintegreted.	

(Stamp.)

Chemical analyses.—The sample of Magnesia and the sample of Magnesius Chloride received were analysed with the following results:—

	Per cent.
(a) Sample of Magnesia—	
Magnesia	77·97
Lime	10·30*
Iron Oxide and Alumina	0·55
Matter insoluble in Hydrochloric Acid	4·06
Loss on ignition	6·80
	99·68
(b) Sample of Magnesium Chloride—	
Matter insoluble in water	0·1
Iron Oxide	Trace.
Lime	...
Magnesium Oxide	19·7
Sulphuric Anhydride	0 4
Chlorine (from Chlorides)	34·1

Remarks.—The results of the above tests indicate that the above materials, in their present state, are not suitable for use in making good quality Magnesium Oxy-Chloride cement.

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* This needs explaining.

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The setting time tests indicate that this may be due to the poor quality of the Magnesia, which as received, was partially hydrated and not sufficiently pure.

NOTE.—There is something wrong somewhere and we are further going into this question and taking it up in the best possible way.

(Sd.)

Superintendent.

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(10) *Letter dated the 25th March, 1938, from the Pioneer Magnesia Works, Ltd., to the Superintendent, Government Test House, Alipore, Calcutta.*

Reference your No. 3753-Cm., dated the 4th/5th March, 1938, Reg. No. 488-P. C., dated 6th November, 1937.

We have to thank you for your Test Certificate and report as above on the use of Magnesium Chloride for Oxy-Chloride Composition Flooring.

We regret to note that the analysis and tests have not given satisfactory results and that the materials sent to you proved unsatisfactory for purposes of the investigations, and the Magnesia (MgO) was even found partially hydrated and impure as mentioned by you.

The unsatisfactory results are apparently due to the impurities in the Magnesia (MgO) submitted to you for the experiments, as we notice that it contains a large proportion of (CaO) which in our opinion ought not to be in the quality of the Magnesia used for this purpose. Better and satisfactory results, we believe, could be obtained from Magnesia free from Calcium Oxide.

However as far as we are concerned we would still like to pursue this on our behalf we would be glad to incur further costs and would be matter further and if you would be so kind as to take some more trials pleased to send you fresh samples as required upon hearing from you.

Judging from the fairly wide use now made even locally by certain important customers of ours for this very kind of Oxy-Chloride Composition Flooring we feel fully confident that given proper attention and care, the trials ought to show that there would be ample scope for this type of flooring and for the consequent rise in demand for Magnesium Chloride, which should justify all our efforts and labour spent on the proposition.

As far as the Magnesium Chloride analysis given by you goes, on converting the same into $Mg\ Cl_2\ 6H_2O$, it shows as high as 98·91 per cent. purity, which is certainly good enough for all practical purposes as you will also agree.

Trusting this will have your best attention and awaiting your favourable reply in due course.

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(11) *Letter No. 393, dated the 7th April, 1938, from the Secretary, Tariff Board, to the Pioneer Magnesia Works, Ltd., Bombay.*

I am directed to enquire when the cost figures of Okha factory for 1937 may be expected.

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(12) *Letter dated the 9th April, 1938, from the Pioneer Magnesia Works, Ltd., Bombay.*

Reference your No. 393 of 7th instant.

In reply to your above letter, we beg to invite your attention to our last letter of 25th March, 1938, forwarding therewith certain statements including the Mithapur Factory costs on Magnesium Chloride for 1937, which we trust have duly reached you.

Under the circumstances we do not quite follow what further cost figures for the Okha Factory are now needed?

2. We enclose herewith an interesting letter No. 329/17—4/Ws., dated the 6th instant just received from the Utilisation Officer of the Forest Research Institute, Dehra Dun, regarding a new possible use for Magnesium Chloride mixed with Magnesium Oxide and Asbestos powder for making a fire proof paint, for which experiments are being conducted, and with satisfactory results so far, as we understand. This just shows the importance of this material and the necessity for further continuance of the Protection for future expansion and development of the Industry in India.

Copies of further correspondence with the Government Test House, Alipore, regarding the Oxy-Chloride Composition Flooring problem are also sent for information.

(Copy.)

GOVERNMENT OF INDIA.

INDIAN STORES DEPARTMENT.

13, Judge's Court Road, Alipore,
Calcutta.

No. 14997, dated the 31st March, 1938.

From

The Superintendent, Government Test House,

To

Messrs. The Pioneer Magnesia Works, Ltd.,
Chartered Bank Buildings, Fort,
Bombay, No. 1.

Subject:—USE OF MAGNESIUM CHLORIDE FOR MAKING OXY-CHLORIDE CEMENT.

Dear Sirs,

Reference your letter dated the 25th March, 1938.

I shall be pleased to carry out such further tests as you may require in the above connection.

I shall inform you of the fee payable and send to you a list of the materials required on receipt of your test-programme.

Yours faithfully,
(Sd.)
Superintendent, Government Test House.

To

4th April, 1938.

The Superintendent,
Government Test House,
Alipore, Calcutta.

USE OF MAGNESIUM CHLORIDE FOR MAKING OXY-CHLORIDE CEMENT FOR JOINTLESS COMPOSITION FLOORING.

Dear Sir,

Reference your No. 14997, dated the 31st March, 1938.

We are much obliged for your above letter saying that you would be pleased to carry out such further tests as may be required in this connection.

Regarding your query about "our test-programme", we may state that we have no particular fixed ideas in the matter and have to look to your department for guidance and suitable execution of the necessary tests as may be deemed proper. For as far as we are concerned, we have no knowledge or experience of the matter nor suitable means of conducting the experiments at our place, and hence it is that we have felt it necessary to trouble you and to entrust the proposition in your hands.

The main problem is to find out how and in what proportion, alongwith Magnesite and/or other substances if any, *could our Magnesium Chloride be used to best advantage* as an Oxy-Chloride Cement for purposes of Jointless Composition Flooring in Buildings and in Railway Coaches and basements as well as for other Stucco work, as *is most extensively used* all over Europe and America; and our purpose may be served if you could successfully demonstrate this and prove its utility to enable our pursuing the matter further as an *industrial proposition.*

Upon hearing from you, we shall be pleased to bear your fees and to supply the requisite materials for suitable trials as required.

Yours faithfully,

For the Pioneer Magnesia Works, Ltd.,

B. S. Lalkaka,

Managing Director.

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(Copy.)

Utilisation Officer. No. 329/17-4/W. S.

From

The Utilisation Officer,
Forest Research Institute.

To

Messrs. The Pioneer Magnesia Works, Ltd.,
Chartered Bank Buildings,
Fort Bombay.

New Forest, Dehra Dun, the 6th April, 1938.

Dear Sirs,

We thank you for your letter of 2nd April, 1938. We are using Magnesium Chloride for making a fire-proof paint, as you surmised. We are mixing the paint with proportions of Magnesium Chloride, Magnesium Oxide, and Asbestos Powder and, so far, the paint evolved seems to be very satisfactory. It has however to be tested against weathering and cracking in the sun. The best proportion of asbestos also has to be determined. We shall be very pleased to receive a small trial quantity of Magnesium Chloride from you, and we shall of course be pleased to send you a report when the final paint has been evolved. Any quantity between 2 and 4 cwts. would be very acceptable. In the meantime we should be glad to hear from you as to whether you deal in Magnesium Chloride also, and whether you have any literature or references on the subject of these two chemicals being used for fire-proofing purposes. If you have any such references we should be very pleased if you could give us the information.

Trivandrum,
5th April, 1938.

S. Kamesam,
Director of Development,

The Pioneer Magnesia Works, Ltd.,
Chartered Bank Building,
3rd Floor, Fort, Bombay.

Dear Sirs,

I am in receipt of your letter dated the 31st ultimo. I shall carefully study the points placed at my disposal and will let you know in course of time my precise requirements.

Thanking you for the specification.

P.S.—Please send one ton of Magnesium Chloride. I shall be thankful if you will let me have any literature on the utilisation of Magnesium Chloride in the making of composition boards with wood excelsior or saw dust.

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(13) *Letter No. 419, dated the 13th April, 1938, from the Secretary, Tariff Board, to the Pioneer Magnesia Works, Ltd., Bombay.*

I am directed to enquire if you can let the Board have your balance sheets for 1937 by the 20th April next.

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(14) *Letter dated the 13th April, 1938, from the Tariff Board.*

Could you kindly inform me when the Kuda Salt Works began production of Magnesium Chloride and the quantity produced year by year since then.

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(15) *Letter dated the 19th April, 1938, from the Pioneer Magnesia Works, Ltd., Bombay.*

In reply to your 2 letters of the 13th instant, I beg to state as under:—

Kuda production of Magnesium Chloride.—I beg to forward herewith the original letter of Messrs. Trikamlal Mahasukram & Co. of Ahmedabad, Sole Selling Agents of the Mayurdhvaj Swadeshi Magnesia Works of Kuda, regarding their figures of production since the start, *i.e.*, from 1932 up to 1937 amounting to 6,835 tons.

Balance sheets for 1937.—As regards this matter I am extremely sorry that our main balance sheet owing to various unavoidable circumstances cannot be ready till some time in May. Meanwhile I am sending you to-morrow under registered cover our typed balance sheet for 1937 for the Mithapur factory which may be of some use.

Letter dated the 16th April, 1938, from Messrs. Trikamlal Mahasukhram & Co., to the Pioneer Magnesia Works, Ltd., Bombay.

With reference to your letter dated the 14th instant, I have to inform you that my factory was started in 1932 and give you below the quantity manufactured each year:—

Year.	Quantity. Tons.	Year.	Quantity. Tons.
1932	697	1936	1,009
1933	1,474	1937	1,011
1934	1,005		6,835
1935	1,639		

(16) *Letter No. 427, dated the 19th April, 1938, from the Secretary, Tariff Board, to the Pioneer Magnesia Works, Ltd., Bombay.*

With reference to your reply to Question No. 32 of the questionnaire, I am desired to ask you in regard to the price realised for Magnesium Chloride at Bombay, whether it is for delivery at Railway station or actually at Mill premises, and if the latter, what amount per cwt. should be added to the freight from Kharaghoda to Bombay.

2. I am also to enquire with reference to your reply to Question No. 25 as to the quantity and proportion of Magnesium Chloride sent to Bombay in wagon loads and in loose lots.

3. The Board would also be glad if you could let it have your average net realised price *ex*-Mill for 1937. The figure of Rs. 4-4-0 as given in reply to Question No. 32 appears to be gross sales realization and includes other charges mentioned in the note.

4. I am also to request you to furnish the Board with the combined cost of both the works for 1937.

An early reply is solicited.

---

(17) *Letter dated the 20th April, 1938, from the Pioneer Magnesia Works, Bombay.*

Reference your No. 427, dated the 19th April, 1938.

In reply to above we have the honour to inform you as under:—

Price realizations as shown per statement given in answer to your Question No. 32. The prices charged are inclusive of free deliveries up to Mill premises whether at Bombay or at Ahmedabad.

The delivery charges from the Railway up to the Mills come to the following approximately.

Per cwt. As.	Charges.
2	From Railway Station to Company's godown.
2	From Company''s godown to Mill premises.
1	Miscellaneous godown and weighment charges, etc.
5	Total.

2. *Question 25.*—Almost the bulk of the material brought to Bombay and Ahmedabad was in wagon loads.

3. The average net sales realization *ex*-Mill in Bombay also works out at about Rs. 4-4-0 per cwt. for the year 1937 subject to charges applying in the case of the other previous years.

4. *A combined costs statement** for Magnesium Chloride production at both Factories for the past year is also enclosed herewith as desired (for private use only).

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(18) *Letter No. 410, dated the 22nd April, 1938, from the Secretary, Tariff Board, to the Pioneer Magnesia Works, Ltd., Bombay.*

With reference to your letter dated the 20th April, 1938. I am directed to say that the charges for railing to mills in Bombay seem high in comparison with the figures, given on page 14 of your representation of landing, clearing, forwarding and delivery charges up to Mills of imported Magnesium Chloride. As the latter include landing charges they should be higher than 5 annas if the figure of 5 annas given for transport of Magnesium Chloride to mills from railway station is correct.

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* Not printed.

(19) *Letter dated 25th April, 1938, from the Pioneer Magnesia Works, Ltd., Bombay.*

Reference your No. 410 of 22nd April, 1938.

In reply to above, we have the honour to state that the handling, clearing, forwarding and delivery charges mentioned at page 14 of our printed representation on the foreign imported material, cover only one handling from the Docks to Bombay Mills, whereas in our case double handling charges have been calculated to allow of removal from Station to godown and thence to the Mills, and hence practically the same charge of 5 annas a cwt. is taken in both cases.

It may be explained that as the foreign stuff may be coming in small lots of 5-10 tons at a time through more than one indentor, it would be quite easy to send it direct to the Mills without being taken to the godown, thus eliminating an intermediate handling as allowed for in our case.

As far as the foreign material goes, the Dock does amount to about Rs. 3-12 per ton *plus* Rs. 3 to Rs. 3-8 a ton extra for subsequent handling and delivery as the case may be.

Trusting that this explanation will be found in order.

---

(20) *Letter No. 461, dated the 27th April, 1938, from the Secretary, Tariff Board, to the Pioneer Magnesia Works, Ltd., Bombay.*

With reference to your letter dated the 25th April, 1938, I am directed to say that at the last Tariff Board enquiry the cost of transport and handling in Bombay was given as 1 anna 1 pie per cwt. The Board is unable to understand why the cost should have risen to 5 annas this time.

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(21) *Letter dated the 29th April, 1938, from the Pioneer Magnesia Works, Ltd., Bombay.*

Reference your No. 461 of 27th April, 1938.

We have the honour to state in reply to your above letter, that in view of the following particulars printed in the previous Tariff Board Report of 1929 to which you refer, there appears some serious confusion somewhere regarding the cost figure mentioned by you of As. 1-1 for transport and handling charges at page 6.

For if you will kindly turn to pages 4 and 56 the charges shown are as under:—

	Rs.	A.	P.	Rs.	A.	P.
Railway freight from Kharaghoda to Bombay at As. 6-2 per B. Md.	0	8	9	0	8	6
Handling from Railway to Godown	0	7	3	0	2	6
Godown to Mills				0	2	6
Total	1	0	0	0	13	6

Again at page 35 in the estimate of costs given, an inclusive charge of As. 10-6 is shown for freight to Bombay and handling charges, from which on deducting the Railway charge of say As. 8-6, a balance of 2 annas remains for one handling alone from Railway to Mills direct without considering the removals to and deliveries from the Godown. Upon further scrutiny it would appear that the figure of As. 1-1 under transport and handling in the second column at page 6 of the 1929 Report, must obviously be a mis-print or should be accounted for on special grounds in view of the fact that As. 7-3 and As. 4 are shown side by side in the preceding and succeeding columns under the same head, and we can assure you that as far as present day conditions go, about As. 5 may be taken as a fair charge, though it is possible that there may be a saving at times in cases of direct deliveries made from the Railway Station to the Bombay Mills. *Vide* also the following remarks at page 5 which will make the position more clear.

"*Transport and handling.*—The low rate of 1 anna 1 pie in 1927 is abnormal and due to unusually large supplies to Ahmedabad and up-country where distances to Mills are less and labour charges lower. The Company's estimate of future cost is 5 annas on the basis of double handling in Bombay but if double handling is gradually eliminated as the Company expects, the figure should be reduced to 4 annas per cwt."

We trust this will satisfy you.

Re PRICE REALIZATIONS.

Reference paragraph 3 of your No. 427, dated the 19th April, 1938.

In continuation of previous correspondence, we would like to invite your attention that a fair proportion of our material also finds its way to more distant and comparatively less remunerative markets in India, like for instance Calcutta, Madras, Cochin, Calicut, Coimbatore, which are ports of entry for foreign Magnesium Chloride, and owing to long distance and heavier Railway and Steamer freights and other dock and handling charges payable at both ends, this must reflect adversely upon our ultimate price realizations and would require careful consideration, as we would be at a greater disadvantage in these places compared to the foreign product.

This is just for your information.

---

(22) *Letter from the Managing Director, The Pioneer Magnesia Works, Ltd., to Superintending Engineer, Public Works Department, Fort, Bombay, supplied to the Tariff Board for information.*

Re USE OF MAGNESIUM CHLORIDE FOR DUST LAYING AND ROAD WATERING PURPOSES.

As you may be aware we had occasion to supply at your request 2 wagons of Magnesium Chloride to your Executive Engineer at Surat for the purpose of allaying the dust nuisance on the Madhi, Haripura Road last February, at the time of the Congress gathering.

Judging from the report received from you, unfortunately for us the experiment did not exactly prove a success or come up to your expectations. But it seems that the fault lay not so much with our material as with certain local conditions and difficulties of operating and melting and using the right proportions and so on, which of course may not have been possible in the rush of the moment, if we may venture to say so. Thereafter we had occasion to supply 10 tons to your Kaira Public Works Department as required, and also took up your suggestion and conducted some experiments at our Kharaghoda Works, and I am now enclosing herewith for your kind perusal and information copies of the Kaira Deputy Engineer's letter to us No. 1516 of 20th instant, as well as our Works Manager's Report of the 10th idem, which may be said to be distinctly hopeful.

As far as climate goes, it may be noticed that *both Kaira and Kharaghoda would be distinctly dryer than Surat* side, and if it was possible to keep the road surface moist at Kaira *for a period of full one month after spraying*, with a solution of water and Magnesium Chloride at the rate of 20 lbs. per 100 sq. ft. it may well be imagined what a blessing and an immense saving in water and money not to mention the health and comfort of the people that might mean, if it could be devised to utilize this stuff on all public roads wherever possible.

Of course the exact costs and proportion of mixing and use to utmost beneficial advantage would have to be worked out and determined but that may not be very difficult with a little care and trouble, and I am sure that if your Department would like to take it up, we on our part can assure you of our whole-hearted co-operation and we feel that such joint efforts are bound to be successful.

In view of our conversation on the subject the other day, I am writing this to seek your kind advice and to ask in what way your Public Works Department may be interested in this matter as regards making a wider use of the material as far as your heavy roads programme may be concerned.

Trusting this may meet with your favourable consideration and requesting the favour of a line in reply at your early convenience.

---

(23) *Letter dated the 3rd May, 1938, from the Pioneer Magnesia Works, Ltd., Bombay.*

We have the honour to acknowledge your telegram just now reading—

> "Please wire quantities of Magnesium Sulphate and Magnesium Carbonate manufactured in your two factories since manufacture started."

We also confirm our following wire, *viz.*:—

> "Reference your wire now received Magnesium Sulphate and Magnesium Carbonate production at both our factories since beginning till 31st March, 1938, is about 525 tons and 355 cwts. respectively."

On going through our records we find the figures of production at both Factories since we began manufacturing these products till the end of March, 1938, as under:—

	At Kharaghoda.	At Mithapur.
	Cwts.	Cwts.
Magnesium Sulphate . . .	5,020	5,560

=Total 10,580 cwts., *i.e.*, say 525 tons.

	Cwts.	Cwts.
Magnesium Carbonate	355	...

=Total 355 cwts., *i.e.*, say 17¾ tons.

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(24) *Letter dated the 4th May, 1938, from the Pioneer Magnesia Works, Ltd., Bombay.*

Re PRODUCTION FIGURES OF MAGNESIUM SULPHATE AND MAGNESIUM CARBONATE AT BOTH OUR FACTORIES.

Reference your telegram of 3rd May, 1938. Further to our yesterday's wire and letter to the Board and to our telephonic conversation just now, we have the honour to submit the following in amplification of our previous remarks.

MAGNESIUM CARBONATE.—This is not produced at present at Mithapur but only at Kharaghoda, where we have begun manufacturing from about September last year, and have produced about 355 cwts. or 17¾ tons altogether up to 31st March, 1938. This is just a beginning and we have every hope that from next year we may be having a production of about 300 tons per annum at Kharaghoda alone.

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MAGNESIUM SULPHATE: *Mithapur Factory.*—This plant was put up with a rated capacity of about 3,000 tons per annum although owing to certain operating difficulties and other unforeseen factors, it may not be feasible to exceed about 2,000 to 2,400 tons a year.

Production began in 1936 and the following figures will give an idea of the total quanties manufactured up to now:—

	Cwts.
1936	393
1937	3,159
1938 January to March	2,010
Total	5,562=Tons 278-2

Kharaghoda Factory.—The circumstances connected with this production here are somewhat peculiar in that despite our investigations and efforts to take out Magnesium Sulphate on an extensive scale directly from the Bitterns in the Kharaghoda Agurs, it has not been found economical or practical to produce it that way except at prohibitive costs and after much elaborate preparation.

Under technical advice therefore, we decided to utilize the residue sludge left after the production of Magnesium Chloride which after all cannot yield more than about 150 tons or so per annum per each 5,000 tons of Magnesium Chloride production yearly.

Trusting that the information will be of use.

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(25) *Letter dated the 3rd September, 1933, from Messrs. J. C. Engineer & Co., to the Pioneer Magnesia Works, Ltd., Bombay, forwarded to the Tariff Board for information.*

Re MAGNESIUM CHLORIDE.

Your quotations of 1st September, 1933. With reference to your above quotations for 5 tons of Magnesium Chloride we regret that the business cannot be placed with you as the Japanese material is offered at Rs. 2-9 per cwt. f.o.r. Bombay. As there is a big difference in prices between your and the Japanese rates you will understand our difficulty in refusing your offer. If you can see your way to reduce your rate to the level of the Japanese rates, we may give you the preference.

---

(26) *Letter dated the 26th September, 1933, from Messrs. Khatau Valabhdas & Co., to the Ahmedabad Jupiter Spinning, Weaving and Manufacturing, Ltd., forwarded by the Pioneer Magnesia Works, Ltd., Bombay, for information of the Tariff Board.*

Re MAGNESIUM CHLORIDE.

We thank you for your favours of the 20th and 25th instant, asking for contract rate of our Magnesium Chloride, for which we quoted you a price of Rs. 3 per cwt. in five cwts. packing f.o.r. Bombay.

The present price quoted to you is an exceptionally cheap one and we are afraid it will not be possible for us to continue to give this price for a long time. We are, therefore, not in a position to enter into a contract for this quality on basis of the present rates.

We would, however, advise you to buy some of the goods we are holding in stock and which we are offering at a very competitive figure. To enable you to place a large order with you we shall deliver the goods f.o.r. Ahmedabad if you order out at a time a minimum of five tons, at our present price of Rs. 3 per cwt.

Always at your service.

(27) *Letter dated the 21st May, 1938, from the Pioneer Magnesia Works.*

Re CASE FOR PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

I have the honour to acknowledge the receipt with many thanks of the following batch of papers returned to us under your orders yesterday, *viz.*:—

Original Balance Sheet statements of our 2 Factories previously submitted as required for the Board's scrutiny for the past 8 years, marked "Private and Confidential".

Sundry costs statements submitted for your Private examination original letters from our foreign agents submitted for your perusal and information, *viz.*, from A. Elder Rud & Co., Ltd., of London, dated the 15th February, 1938. R. S. Stokvis and Zonen of Rotterdam, dated the 24th February, 1938, and from G. Maitre, dated Paris, the 3rd March, 1938.

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THE PIONEER MAGNESIA WORKS, LTD.

B.—ORAL.

Evidence of Messrs. B. S. LALKAKA, F. R. MOOS and KAPILRAM VAKIL recorded at Bombay on Thursday, the 17th March, 1938.

President.—We shall first of all get down the positions you hold in the Company.

Mr. Lalkaka.—I am the Managing Director of the Pioneer Magnesia Works, Limited.

Mr. Moos.—I am the Manager and Secretary to the Pioneer Magnesia Works.

Mr. Vakil.—I am the Managing Director of the Okha Salt Works.

President.—First of all let us get clear about the position of the Company and its changes since 1929.

Mr. Lalkaka.—Till 1929 it was a private partnership concern.

President.—And since?

Mr. Lalkaka.—Since 1935 we turned into a private limited company.

President.—As regards the relationship between the Kharaghoda factory and Mithapur, what is the position exactly?

Mr. Lalkaka.—Up to 1925 we had only one factory at Kharaghoda and after that we had intensive competition from Germany. We came into touch with Mr. Kapilram Vakil. His name was recommended to us by Sir Robert Bell, the then Director of Industries and we took the opportunity of consulting him on technical points. Then with his advice we sent bitterns to Germany and had a sort of factory scale experiment conducted at our expense there and we had their report. Then on that Mr. Kapilram Vakil suggested improvements which were under consideration. In the meanwhile, he started the Okha Salt Works and he placed the proposition before us whether it was advisable to put up a factory at Kharaghoda or at Okha. Just as Government had a very big salt works at Kharaghoda the Okha Salt Works would have a large salt works at Mithapur and there was therefore no difficulty in getting the raw material. If we did not take advantage of his offer, Mr. Vakil said that he might be tempted to put up a scheme himself or find somebody else to do so, because such large supplies of bitterns would be available at Okha. For several reasons we thought it advisable to join forces and open a subsidiary company at Mithapur mainly with an eye on exports, because at that time we had also begun exporting on a small scale from Kharaghoda, and Okha offered better opportunities because of the nearness of the sea. The Mithapur Salt Works came into operation in about 1927 and the Magnesium Chloride factory in 1931 and from this year we slowly began exporting from there. Formerly we were manufacturing Magnesium Chloride direct from the bitterns which was a much more difficult and wasteful method and as a result of further experiments, research and deep study, Mr. Vakil advised that it would be better to have an intermediate plant for eliminating the salts coming in first before supplying the freed-liquor to the Magnesium Chloride factory. With that object in view we put up a by-products plant.

President.—In what year was it?

Mr. Lalkaka.—The by-products plant came into operation in 1937. Mr. Vakil and myself went to Europe, had technical advice, invited tenders and gave orders for the plant. That plant was, really speaking, put up in 1937.

President.—So the Mithapur factory has been operating since 1937.

Mr. Lalkaka.—For the by-products, yes. For the Magnesium Chloride since 1931.

President.—The more modern method has come into operation since 1937?

Mr. Lalkaka.—Yes.

President.—Therefore the figures for 1937 are important.

Mr. Lalkaka.—Yes.

President.—We understand that the Okha factory is going to be taken over by a new company.

Mr. Lalkaka.—It was last year, I think, in April or May that a scheme was prepared by Mr. Vakil for alkalis and placed before the Tatas. The Tatas had the scheme thoroughly examined by international experts, British, American, Swiss and German, and as I understand by now they have already completed their draft negotiations also with the Baroda State as well as with the Okha Salt Works and ourselves in regard to the acquisition of the salt and the magnesia and by-products plants. With regard to our own acquisition, a question might be asked as to what was the necessity of passing over our rights to another company, when in our own interests it might perhaps have been more advisable to work the same independently as we are now doing. We took the view that after all the proposed new company would be having a very big scheme and possibly our existence as a small unit might not fit in with their requirements, and so it might be better for all concerned to merge our interest with the new chemical company. We thereupon discussed the whole matter and have now practically come to a certain settlement whereby we shall be parting with our Mithapur works and keeping our Kharaghoda works to ourselves without jeopardising its existence in any way. One of the terms of the understanding between us is that we should buy as principal to principal all the Magnesium Chloride produced at Mithapur within certain limits so that we would have the control over the whole sale for a certain number of years.

President.—How much is it going to produce?

Mr. Lalkaka.—About 3,000 tons per annum.

President.—Is it limited to 3,000 tons?

Mr. Lalkaka.—For the present. The arrangement is that if there is any *bonâ fide* increase in the Indian mill consumption of Magnesium Chloride, both the factories could produce more in a certain agreed portion to meet the increased demand.

President.—When is this new company likely to come into existence?

Mr. Lalkaka.—Everything is ready, but unfortunately one of the Directors who was in sole charge of the project is lying ill at the hospital for the last few months and another Director is absent in Europe and is shortly expected.

Mr. Rahimtoola.—Can you give us an approximate estimate of the time?

Mr. Lalkaka.—My own feeling is that the change will come in with the beginning of the new season in September.

Mr. Rahimtoola.—Will that be a public Limited Company?

Mr. Lalkaka.—Yes.

Mr. Rahimtoola.—These two companies will then cease to exist?

Mr. Lalkaka.—The Kharaghoda company will continue to exist as a private limited company, but the other one will be part of a big public company.

Mr. Rahimtoola.—It is laid down in the Fiscal Commission that the public should be given an opportunity to subscribe in the case of protected industries. The companies enjoying protection should be therefore public limited liability companies.

Mr. Lalkaka.—We took this view. After all ours is a very small industry requiring very small capital. We did not think that the public would be interested.

Mr. Rahimtoola.—The question only arises in cases of protected industries. It is only fair that an opportunity should be given to the public to subscribe. This is what is said also in paragraph 104 in the Board's report on paper. You have already enjoyed protection and are an applicant for further protection. It is therefore desirable that the Board should draw your pointed attention to this matter.

President.—I would like to ask one or two questions about the other factory at Kuda. Their representative has not come.

Mr. Lalkaka.—No.

President.—When I saw him at Kharaghoda, he said that he might come, but he has not come.

Mr. Lalkaka.—I was expecting him. I didn't know why the didn't come.

President.—You do not know the exact quantity they are manufacturing.

Mr. Lalkaka.—As a matter of fact according to our arrangements, they have agreed to manufacture up to 1,000 tons.

President.—Have they manufactured so actually?

Mr. Lalkaka.—Yes. Up to 1,000 tons.

Mr. Rahimtoola.—That is the maximum limit under the agreement?

Mr. Lalkaka.—Yes under our mutual arrangements. Their resources are very limited in the sense that Dhrangadra Durbar can manufacture unlimited quantities of salt, but under the Government of India agreement they are restricted to produce only as much as the State can consume, without duty. If they wanted to produce more and sell more outside of their State limits they have to pay duty. This fight has been going on for years. They have very large salt stocks amounting to about 10 to 15 lakhs of Bengal maunds. They are banking hopes on the working of their alkaly plant which might consume about 100 tons a day. That factory has been lying idle for a number of years so that whatever salt they manufacture goes into stock. Therefore at present they are only manufacturing salt just sufficient to give them enough bitterns to manufacture up to about 1,000 tons of Magnesium Chloride.

President.—Supposing there is no agreement, will they manufacture more?

Mr. Lalkaka.—It would not pay them to manufacture salt simply for the sake of the bitterns. That would be a costly and ruinous method of manufacture. Therefore, I take it that they will not care to manufacture more.

President.—It would not be remunerative?

Mr. Lalkaka.—No.

President.—Would you explain what the quota arrangement is?

Mr. Lalkaka.—We took the total annual consumption of Magnesium Chloride by the mills, leaving aside any other use, at 6,000 tons. Then we struck upon the ratio of 1 to 3, *i.e.*, we should be selling 3 tons to their selling one ton, and in that way we arrived at a certain quota arrangement. Anything over and above that figure sold by either party to the Indian mills, was to be paid for upon a certain agreed formula.

President.—If you make more than 3,000 tons and sell, you will have to pay them. Similarly if they make more than 1,000 tons and sell, they will have to pay you.

Mr. Lalkaka.—Yes.

President.—It is really a mutual arrangement to prevent competition

Mr. Lalkaka.—Yes. It suits them better. They restrict themselves to sales in Ahmedabad and in Central India, and they do not come to Bombay or go to other places where they may be at a disadvantage.

Mr. Rahimtoola.—Due to railway freight?

Mr. Lalkaka.—Yes.

President.—Do they sell in the same form? It is all solid, is it not?

Mr. Lalkaka.—Yes, in the form of solid. Their quality is more or less similar to ours. As a matter of fact they have adopted our methods. They had been our selling agents for a number of years before they opened their own factory.

President.—Are they still your selling agents?

Mr. Lalkaka.—No.

President.—Do they sell independently?

Mr. Lalkaka.—Yes.

President.—In the markets allotted to them up to 1,000 tons?

Mr. Lalkaka.—Yes.

Mr. Rahimtoola.—Are the prices in any way regulated or mutually agreed?

Mr. Lalkaka.—We have come to an understanding.

Mr. Rahimtoola.—That means you are assured of a market at a reasonable price?

Mr. Lalkaka.—Yes.

Mr. Rahimtoola.—Even if you exceed your quota, the price is not affected.

Mr. Lalkaka.—No.

President.—Now in regard to the question of utilisation of Magnesium Chloride by the handloom industry, we had a discussion with the Director of Industries, Bombay, the other day, and the difficulty is that the drum in which you send Magnesium Chloride is rather large for use by the cottage industry.

Mr. Lalkaka.—We can accommodate ourselves to the requirements of the trade.

President.—It is suggested that you might provide Magnesium Chloride in small containers suitable for cottage industries as we understand the Imperial Chemical Industries are already doing with regard to certain materials. Have you thought of that?

Mr. Lalkaka.—We have. The only difficulty is marketing. It is not so much a question of containers. Each individual handloom consumes 3 to 5 lbs. of Magnesium Chloride per annum and a certain district may have 10, 20 or even 100 looms. They are diffused all over the country, and we have not been able to hit upon a suitable method or plan to market this product. Otherwise the factory would be only too willing to do anything in their power to accommodate themselves to the requirements of the handloom trade

President.—Does Magnesium Chloride deteriorate when it is kept open?

Mr. Lalkaka.—I should not think so. We had some such complaint before and we had put the problem to the Bangalore Research Institute. That was 20 years ago and we had an assuring report from them that even if the stuff remained for 2 years in the same container, provided the iron rust did not catch it, Magnesium Chloride would not deteriorate.

President.—I was thinking more of the cottage industry. They would not use even a 5 lbs. container all at one time.

Mr. Lalkaka.—There is only a danger of corrosion which is remote. But if it is exposed to air, it might run to water.

Mr. Rahimtoola.—Mr. Vakil, could you further enlighten the Board on this point?

Mr. Vakil.—Magnesium Chloride is one of the most powerful hygroscopic substances. It has the property of rapidly absorbing moisture from the air. It is not possible to leave Magnesium Chloride exposed to air for any length of time. The place may be nearer the sea, inland or up-country, but the moisture in the air is always absorbed by Magnesium Chloride. Then, the solid Magnesium Chloride gets melted and once it is melted it would be very difficult to keep it. So, the problem is a very difficult one. If the small consumer opens his tin, he must use it up.

Mr. Rahimtoola.—What would be the period within which he should use it?

Mr. Vakil.—Within a short period. Otherwise it will run into water. Once it runs into water, it can be used but the proportion based on solids for size mixing will not hold good in respect of the liquid. It depends upon the strength of the melted stuff and an ignorant man like the handloom weaver cannot be expected to know it. Thus the whole thing will go wrong.

President.—Yes, unless you can devise some means.

Mr. Lalkaka.—The chief difficulty is marketing.

President.—It is a question of supplying Magnesium Chloride in sufficiently small quantities.

Mr. Lalkaka.—Yes.

President.—Your competition is from Germany, France, Japan and Palestine recently.

Mr. Lalkaka.—Yes. The recent imports from France are at a very low figure.

Mr. Rahimtoola.—How does that price compare with the Japanese price?

Mr. Lalkaka.—Slightly higher.

President.—But slightly lower than the German price?

Mr. Lalkaka.—Yes, it is. This is the first time that a consignment has come from France at such a low price.

Mr. Rahimtoola.—Which is the lowest price at the present moment?

Mr. Lalkaka.—Japanese. Of late on account of Japan's entanglements in the War, we have not heard of any recent Japanese imports.

President.—You have given some prices on page 14 of your replies to the questionnaire. Are these the latest prices?

Mr. Lalkaka.—There is a mistake on page 15. Instead of £1-15-0, it should read as 11 shillings per ton for the Japanese Magnesium Chloride or 5 annas 10 pies per cwt. *ex*-works in Japan which is ridiculously low.

President.—What is the lowest price at which Japanese Magnesium Chloride has been sold?

Mr. Lalkaka.—At Rs. 1-7-6 per ton c.i.f. Bombay. Do you mean the c.i.f. price or the selling price?

President.—Actual selling price.

Mr. Lalkaka.—Rs. 3-2-6 including the prevailing duty and the landing clearing charges. In 1933 Japan quoted a very low price of Rs. 2-9-0 f.o.r. Bombay. That is the lowest price we have come to know of.

Mr. Rahimtoola.—Is that the selling price?

Mr. Lalkaka.—Yes, in Bombay. In Ahmedabad they have offered it at Rs. 3, though the railway freight from Bombay to Ahmedabad is 12 annas.

President.—Since when has Japan ceased to land Magnesium Chloride?

Mr. Moos.—It has not completely ceased. Some quantities are still imported but the amount of imports has fallen. As we have got actual contracts with most of the mills, they are not able to sell.

President.—I take it that the German and Palestine Magnesium Chloride has not been landed in India at such low prices?

Mr. Moos.—No.

President.—As regards your cost of manufacture we shall take your latest figures as a basis for discussion. I shall come to that later. I would like to ask you a few general questions about your application to the Government of India under the Safeguarding of Industries Act. That was in the year 1933. That was a Departmental enquiry by the Government of India.

Mr. Lalkaka.—Yes, here is a copy of our representation (handed in).

President.—Have you a copy of the Government of India's orders on that?

Mr. Moos.—The duty was changed from 8 annas 9 pies to Rs. 1-5-0, afterwards. After sending this letter I had a discussion with Dr. Meek.

President.—They did not send you any other reply informing you that the duty had been raised.

Mr. Lalkaka.—No.

President.—The duty came into force on 23rd December, 1933.

Mr. Lalkaka.—Yes.

President.—You have just sent us the results of the tests made at Alipore as regards the use of Magnesium Chloride for Jointless Flooring purposes. They are not favourable.

Mr. Lalkaka.—I am inclined to think that there is something wrong with the magnesite sent to them. They had asked us to supply them with a certain quantity. Being unfamiliar with the product we might have sent something which was not quite satisfactory or up to the mark.

President.—You think there was something wrong with the magnesite?

Mr. Lalkaka.—I should think so.

President.—How has your export trade been developing?

Mr. Lalkaka.—We have come up to a stage for the last two years where it has remained stationery. It has gone up to about 2,000 to 2,500 tons. There are so many difficulties in our way, *viz.*, quota and exchange restrictions, barter arrangements, depreciated currencies and so on, all of which make it extremely difficult for us to make much headway. Then again, so far as Great Britain is concerned, I would like to draw attention to one important factor. We have under the Ottawa agreement 20 per cent. preference. But my attention has just been drawn to the Lloyds Import Duties' list which shows that in the case of shipbuilding yards they are authorised to import duty free, so that the advantage of the 20 per cent. preference is lost to us and we are placed exactly in the same position as the German material. A lot of business is lost in that way.

Mr. Rahimtoola.—When was this order passed?

Mr. Lalkaka.—My attention was drawn to it two months ago.

Mr. Rahimtoola.—Was it before the Ottawa Agreement?

Mr. Lalkaka.—It is more than we can say.

President.—Of course you know that a new trade agreement is under consideration. Have you made any representation?

Mr. Lalkaka.—No, not on this point but on the general question of preference. We shall send you an extract.

Mr. Rahimtoola.—Do you know whether the Indian article is excluded from this provision?

Mr. Lalkaka.—Our Glasgow agent drew our attention to this matter and informed us that we were not getting the advantage of the 20 per cent. preference. The German material has to pay a duty from which however it would be exempt when supplying to shipbuilding yards. The duty is

£1 per ton on imports from all other countries and supposing the import price c.i.f. London is £4, with the additional £1 duty it would make it £5, but for the shipbuilding yard they would only sell at £4 per ton.

Mr. Rahimtoola.—What will be the consumption for shipbuilding?

Mr. Lalkaka.—I cannot say but in view of the extensive shipbuilding work in Great Britain, it would be a pretty big consumption.

President.—You have given us in your subsequent letter an estimate of the cost of production of Epsom Salt.

Mr. Lalkaka.—That is from the sludge at Kharaghoda. The Mithapur cost of Epsom Salt direct from the Bitterns is very much higher.

President.—Is that the actual?

Mr. Lalkaka.—Yes.

President.—What is the realised price?

Mr. Lalkaka.—It is round about Rs. 3-4-0 per cwt. in Bombay. That is the net realised price.

President.—Do you sell it mainly to mills? You do not sell it for any other purpose?

Mr. Lalkaka.—The Mithapur material is purer and goes for pharmaceutical purposes also but the works cost does not work out the same for both the factories owing to entirely different conditions.

President.—What would be the figure?

Mr. Vakil.—The most recent figure is Rs. 2-12-0 at Okha. In the Mithapur plant the cost of production can be materially brought down if the power is cheap. It is all a question of power.

Mr. Lalkaka.—At present our electric bill is pretty high; we spend quite a fair amount on power.

President.—Before we go into the details of the costings, there are one or two general points I would like to be cleared up. As the Okha Salt Works is going to be formed into a separate company we have clearly to deal with the question of cost given for Kharaghoda. The works cost at Mithapur owing to various circumstances is rather high.

Mr. Lalkaka.—Not so far as Magnesium Chloride is concerned. We can send you the 1938 figures and you will see that the costs have gone down.

President.—Your previous figures are rather high?

Mr. Lalkaka.—Yes they are. But after these changes they are bound to be much better than before. There is a reduction.

President.—As Mithapur has been more or less in the experimental stage, the Tariff Board will have to pay greater attention to the Kharaghoda costs. There is another point: the cost and profits on the Epsom Salts and Magnesium Carbonate are included in these estimates, are not they?

Mr. Lalkaka.—No Sir. The production of both these articles has been so very negligible.

President.—That is not the point. The question is whether you have included them.

Mr. Lalkaka.—They have not been included. They have been kept entirely separate. Magnesium Carbonate is a derivative and not a by-product.

President.—Neither cost nor credit has been given?

Mr. Lalkaka.—The costs are separate and the sales are separate.

President.—In Mithapur what would you say?

Mr. Vakil.—Magnesium Carbonate is a derivative product of Magnesium Chloride.

Mr. Lalkaka.—Magnesium Chloride provides the raw material for the manufacture of Magnesium Carbonate.

President.—In Mithapur are the costs kept separate too?

Mr. Vakil.—Yes.

President.—There must be certain items which are common?

Mr. Lalkaka.—In overheads you may say they are common but as far as the production side is concerned there is nothing common.

President.—I presume you have not made separate allocation for overheads for Epsom Salt?

Mr. Lalkaka.—We have during the whole life of Kharaghoda not produced more than a couple of hundred tons of Epsom Salt.

Mr. Moos.—We have kept the overheads separate. We pay for the remuneration of the Manager. So far as the head office charge is concerned the production is so negligible that it is not taken into consideration at all.

President.—Interest on working capital?

Mr. Moos.—That is entirely separate.

President.—Head office is common, insurance is common. Rents, rates and taxes?

Mr. Moos.—That will be separate.

President.—Royalty?

Mr. Moos.—Separate.

President.—Selling expenses?

Mr. Moos.—Separate.

President.—Miscellaneous, travelling expenses, postage and telegrams.

Mr. Moos.—They are common. In certain cases certain commissions have to be paid to dealers and others.

Mr. Rahimtoola.—The costs submitted by you in 1933 were they joint or separate?

Mr. Lalkaka.—That was only for Kharaghoda.

Mr. Rahimtoola.—For Kharaghoda factory the cost was Rs. 2-4-6 per cwt.?

Mr. Moos.—We were given only one or two days and we were already late so we had to give approximate costs based on the past year's working.

Mr. Rahimtoola.—During the last four years the cost has been reduced to 8 annas a cwt. Is that correct?

Mr. Moos.—No. It may be 4 annas.

President.—Rs. 2-3-8 to Rs. 1-15-5; it will come to a little more than 4 annas.

Mr. Moos.—We have mentioned that though depreciation has been allowed at such and such a rate, it has to be borne in mind that owing to corrosion of the plant, the depreciation will be higher.

Mr. Lalkaka.—We have taken the depreciation figure 2 annas higher.

Mr. Rahimtoola.—What is the depreciation you have charged in the 1937 costs?

Mr. Lalkaka.—As. 1-1·73 per unit of production.

President.—What is the correct figure. There was some omission.

Mr. Lalkaka.—It comes to As. 3-7·1.

President.—Is the total correct?

Mr. Lalkaka.—Yes. It was only an omission.

Mr. Rahimtoola.—Interest on working capital was As. 1-0·32, whereas to-day it is As. 1-6.

Mr. Lalkaka.—Because we are using more of our capital than borrowed capital.

Mr. Rahimtoola.—Generally in companies when they borrow money out of the reserve fund they charge interest.

Mr. Lalkaka.—We have not been following that policy.

Mr. Rahimtoola.—My point is this: you are asking for the same amount of protection which you claimed in 1933 and I want to know the basis on which the present figures were arrived at.

Mr. Lalkaka.—In 1930-31 the depreciation was 1 anna and from that it has gone up to 2 annas in 1933. There were also certain qualifying remarks about more constant repairs and replacements owing to the chemical action on the plant and machinery.

Mr. Rahimtoola.—In this estimate you have put down as 4 annas. What is the depreciation you allowed in 1937?

Mr. Moos.—As. 1-1·73, *i.e.*, 10 per cent.

Mr. Rahimtoola.—If we accept this basis the result is a reduction of 8 annas a cwt. in the cost of production.

Mr. Moos.—4 to 5 annas have been reduced.

Mr. Rahimtoola.—Is the price of Japanese Magnesium Chloride reduced since 1933?

Mr. Lalkaka.—Practically it has remained the same.

Mr. Rahimtoola.—Then how can you ask for the same amount of protection.

Mr. Lalkaka.—The depreciation is considerably more.

Mr. Moos.—There has been a reduction of 4 annas. That shows we are trying our best to bring down our cost of production.

Mr. Lalkaka.—One need not go by the cheapest production. We may have to strike an average.

Mr. Rahimtoola.—If you could give us further explanation, then we might be able to consider your claim. On the statements so far received the present protection cannot be justified.

Mr. Moos.—Larger production means lower overheads. That is one of the points. Larger sales mean lower selling charges.

Mr. Rahimtoola.—At present you don't find any difficulty in disposing of your production?

Mr. Lalkaka.—That is because we are well established. In 1933 the total production was 5,625 tons. In 1937 it has gone up to 6,932 tons.

Mr. Rahimtoola.—I am not finding fault with your figures. My point is that the present position does not justify continuance of the same amount of protection. If as a result of increased production the cost has decreased the present rate of protection is not necessary for the industry. According to your own figures I have not examined the details of the present costs—the amount of protection asked for does not seem to be justified. I am at present comparing the figures given by you on both the occasions.

Mr. Lalkaka.—Quite right.

President.—I have explained to you the practice of the Board is to take the manufacturing cost with a reasonable profit and compare it with the landed price.

Mr. Lalkaka.—Our railway freights have also got to be taken into account.

President.—That is considered separately to find out whether you have any freight advantage or disadvantage.

Mr. Lalkaka.—The foreign product has no freight to bear in the case of sales in Bombay.

Mr. Rahimtoola.—Is freight contained in the selling expenses?

Mr. Lalkaka.—It is very difficult to have a uniform freight item. There are so many different localities where the product is marketed. For instance in Bombay and Ahmedabad we give free delivery. In other places like Cawnpore, we give f.o.r. Kharaghoda terms. So it would be very confusing to have one uniform system.

Mr. Rahimtoola.—The general practice is not to sell *ex*-mills.

Mr. Lalkaka.—Except at Bombay and Ahmedabad—where it is sold *ex*-mills.

Mr. Rahimtoola.—Who bears the freight charges?

Mr. Lalkaka.—Ultimately the consumer pays though the freight has to be borne by us in the first instance. Whatever the selling price may be that is inclusive of the railway freights and handling charges.

Mr. Moos.—We quote for mill delivery in Bombay and Ahmedabad. For Madras and other places c.i.f. terms and for Calcutta mill deliveries.

Mr. Rahimtoola.—How much reduction would you make in the overhead charges if these common items were deleted? Would it be one to two annas?

Mr. Lalkaka.—Hardly a matter of a pie or two. I should think as far as Kharaghoda is concerned, it would depend upon the quantity of the products manufactured which except for Magnesium Chloride are very negligible. Under our arrangement with the new company which may come into being, we have given an undertaking not to manufacture more than about 100 tons of Epsom Salt at Kharaghoda.

Mr. Rahimtoola.—I am talking of by-products.

Mr. Lalkaka.—We don't manufacture more than 100 tons of Epsom Salts and about 300 tons of Magnesium Carbonate, *i.e.*, altogether about 400 tons and as against 7,000 tons of Magnesium Chloride what would be the proportion of the overheads, which might influence the costing one way or the other?

President.—We shall take that into account, 400 tons as against 7,000 tons.

Mr. Lalkaka.—$\frac{1}{17}$th.

President.—Head office expenses would come to Rs. 1,200.

Mr. Lalkaka.—It comes to 1½ pies.

Mr. Moos.—For that work we might have to engage a little additional staff particularly when the product is new and we have to carry on propaganda.

Mr. Lalkaka.—It does not influence cost.

President.—Not materially.

Mr. Rahimtoola.—You have asked for interest on Rs. 4 lakhs as the working capital required. Is that not on the high side?

Mr. Lalkaka.—Even at the end of December last according to our latest figures, there is a stock valued at Rs. 75,000 lying at Mithapur. There is almost an equal amount lying at Kharaghoda. Then we calculate at least 3 months after sale for the return of the sale monies. Our annual average sales work out to about Rs. 60,000 to Rs. 70,000. That money is not returned to us in less than three months. It takes about 3 months from the date of supply to the date of payment. Then again our peak stock is not at the end of December, but at the end of June when our factory is closed for the season.

Mr. Moos.—We have to carry large stocks for 6 months.

President.—In regard to allocation of overheads there is one other point regarding the allocation between Mithapur and Kharaghoda. In regard to interest on working capital, Head office establishment, Managing Director and other administrative charges, Directors' and Auditors' fees, etc., the amounts under these items have all been debited to Kharaghoda. Strictly speaking there ought to be some apportionment under these heads against Mithapur. There is only one year in which Mithapur is comparable and that is 1935 when there was a fair amount of production.

Mr. Lalkaka.—And last year also.

President.—You will give us these figures later.

Mr. Lalkaka.—Yes.

Mr. Rahimtoola.—What exactly do these selling expenses represent?

Mr. Lalkaka.—We have to pay 5 per cent. commission to our selling agents in Bombay, Calcutta, Ahmedabad and so on.

Mr. Rahimtoola.—5 per cent. on sales.

Mr. Moos.—In Calcutta we pay 7½ per cent.

Mr. Lalkaka.—In Calcutta we have no office, but the sales in Calcutta are comparatively small. Then there would be a certain amount of commission paid to the export agents. Mithapur would be separate and Kharaghoda would be separate.

Mr. Rahimtoola.—I think the reason is not to increase the cost of shipbuilding.

Mr. Lalkaka.—A considerable portion of shipbuilding being on Government account, probably Government instead of realising the duty and paying it out of their own pockets, may consider it worth their while to admit it free of duty.

Mr. Rahimtoola.—The Board can only consider that question if it has hindered your export trade.

Mr. Lalkaka.—To a certain extent it has.

Mr. Rahimtoola.—If you can dispose of the entire quantity that you produce, I don't think the company has any grievance.

Mr. Lalkaka.—No.

President.—Could you produce more if you were asked?

Mr. Lalkaka.—We only produce as much as we find a market for.

Mr. Rahimtoola.—What is the maximum capacity?

Mr. Lalkaka.—For instance we could double the production—at least 1½ times as much. Even at Mithapur we could have at least 4,500 tons if we want to.

Mr. Rahimtoola.—That means how much?

Mr. Lalkaka.—13,000 tons.

Mr. Rahimtoola.—That means an increase of 4,000 tons.

Mr. Lalkaka.—Yes, if it comes to a pinch, we could even produce more.

Mr. Rahimtoola.—As far as export is concerned, is the price remunerative?

Mr. Lalkaka.—It is because we have such a large domestic trade that we are able to hold our own in the case of exports. No man can start a factory for export purposes only. Production enables us to reduce the cost, so that ultimately we are not selling at a loss. We are just even in respect of foreign sales.

President.—It reduces your total overheads.

Mr. Lalkaka.—Yes.

President.—The prices at which you are able to sell outside the country are more.

Mr. Lalkaka.—We are selling at a higher rate in India than what we are realising in the foreign market. If you will look at the retail prices in England according to the printed circulars we receive from time to time the retail price is 1½ times more than the c.i.f. price quoted.

President.—That means that is the selling price.

Mr. Lalkaka.—This is in bulk. This is for an importer. After all we sell outright as principal to principal. The purchaser has to bear the godown charges.

Mr. Rahimtoola.—I am at present concerned with the price your factory is able to realise in the export market. You told me that those prices are not remunerative if they are taken independently.

Mr. Lalkaka.—No.

Mr. Rahimtoola.—So it is not worth while selling in foreign countries unless you have got a big home market.

Mr. Lalkaka.—I should think so.

Mr. Rahimtoola.—What about other places? How are the prices in those places?

Mr. Lalkaka.—They are about the same, perhaps 5 shillings less. In London we are able to get the highest price on account of the £1 per ton duty difference. In other places we are obliged to sell on a parity with the German product.

Mr. Rahimtoola.—Are you able to get the same price?

Mr. Lalkaka.—Same as the German price more or less.

Mr. Rahimtoola.—Also in the United Kingdom.

Mr. Lalkaka.—Yes according to the reports we have.

Mr. Rahimtoola.—Then the question is not quite clear to my mind. Do I understand that the Germans are also in the same position as yourself with regard to their own home market?

Mr. Lalkaka.—We do not know about their home markets. They hold the monopoly of the world's supplies.

Mr. Rahimtoola.—How does their price compare with the Indian price?

Mr. Lalkaka.—The figures of customs returns London, would show the prices at which the foreign material enters the British market.

Mr. Rahimtoola.—Does it show the Indian price?

Mr. Lalkaka.—Yes, the Indian, French, German and Palestine prices and so on.

Mr. Moos.—They are here (shown).

Mr. Rahimtoola.—So you have given them?

Mr. Lalkaka.—Table C gives exports of Pioneer Magnesia Works, Ltd.'s Magnesium Chloride to different ports in United Kingdom and Table D to different ports other than United Kingdom.

Mr. Rahimtoola.—I have seen those tables but they do not give me any idea.

Mr. Lalkaka.—The c.i.f. German price in the United Kingdom is always £1 lower as they have £1 duty to pay. Their price comes on a parity with ours in England.

Mr. Rahimtoola.—That means you have a distinct advantage of £1.

Mr. Lalkaka.—That is true.

Mr. Rahimtoola.—Prices are adjusted accordingly.

Mr. Lalkaka.—Except for shipbuilding.

Mr. Rahimtoola.—That is what I have noticed.

Mr. Moos.—In 1928-29 the prices were £8 to £9. The prices have been reduced to £4.

Mr. Lalkaka.—They have had to reduce their prices since our entry into the English market.

President.—For what purpose is Magnesium Chloride used in shipbuilding?

Mr. Lalkaka.—For flooring as far as we think.

Mr. Moos.—Please see Table E in this connection.

Mr. Lalkaka.—There is a progressive reduction in the price of the French material in the United Kingdom markets as will be seen from Table E. In one particular month the price is shown as £18 to £20 a ton.

President.—I have looked into that figure and I thought there was a sudden rise. It stands to reason that on account of the depreciated franc, the price would be lower and not higher.

Mr. Rahimtoola.—In spite of the consignment from France referred to by you, the competitor against the Indian product is still Japan.

Mr. Lalkaka.—Yes.

Mr. Moos.—This is the first consignment from France.

Mr. Lalkaka.—That shows that we are not the only people in the market.

Mr. Rahimtoola.—Through which ports do imports enter into India?

Mr. Lalkaka.—Bombay, Calcutta, Madras and the Kathiawar ports, etc.

Mr. Rahimtoola.—What about Madras?

Mr. Moos.—Yes, imports do reach India through Madras, Cochin, Calicut, also. But of late imports have dropped at Madras. In Cochin we have practically captured the whole market. There have been still some Japanese imports in Cochin and Madras.

Mr. Rahimtoola.—We have received a circular from the High Commissioner of India with regard to the quality of Indian Magnesium Chloride which shows that it is not quite up to the German standard. I wonder whether Mr. Vakil has seen it. It is written here that the quality of the Indian product is reported to be good but not quite up to the German standard.

Mr. Lalkaka.—It depends on what sources they have obtained it from.

Mr. Rahimtoola.—Yes, that is true.

Mr. Lalkaka.—Analysis has been made in Germany itself, Glasgow and London.

President.—With regard to your overhead charges, depreciation is at the standard rate.

Mr. Lalkaka.—Yes.

President.—In addition to that, you put a charge for obsolescence.

Mr. Lalkaka.—Yes. For one or two years I have done so.

President.—Strictly speaking, that is not chargeable to revenue account.

Mr. Moos.—When the process becomes obsolete, we have to charge it to revenue account. The process has been entirely changed and the whole plant has been written off.

President.—Then, it will come under capital.

Mr. Moos.—Even the Income-tax people have admitted that.

President.—In both cases have they allowed it?

Mr. Moos.—Yes.

President.—In regard to management expenses, the amount has gone up. What is the reason for that?

Mr. Lalkaka.—On account of the remuneration to the Managing Director.

President.—At what rate is the remuneration paid?

Mr. Lalkaka.—5 per cent. on net profits.

President.—That is apart from other charges.

Mr. Lalkaka.—Yes.

President.—Is there a fixed charge for head office?

Mr. Lalkaka.—No fixed charge: only actuals.

Mr. Rahimtoola.—What is the rate of the Managing Agency commission?

Mr. Lalkaka.—No Managing Agency commission.

Mr. Rahimtoola.—This amount is for the Managing Director?

Mr. Lalkaka.—Rs. 250 per month *plus* 5 per cent. on profits, after charging interest and depreciation.

President.—It is not net profits then?

Mr. Lalkaka.—I am sorry I was wrong in saying that it was 5 per cent. on gross profits. We will however make sure and let you know later.

President.—Are there any other important items?

Mr. Lalkaka.—I don't think so.

President.—What about the Directors' and Auditors' fees?

Mr. Lalkaka.—They are very moderate since it became a limited concern.

Mr. Rahimtoola.—When did it become a limited private company?

Mr. Lalkaka.—In August, 1935.

Mr. Rahimtoola.—As regards head office expenses, in 1929 it was a little over Rs. 6,000 but in 1932 there was a big jump.

Mr. Lalkaka.—We shall send you the details later.

Mr. Rahimtoola.—Have you given figures for royalties separately?

Mr. Lalkaka.—Yes.

President.—Insurance figure has gone up.

Mr. Lalkaka.—Yes, on account of extra insurance under the Workmen's Compensation Act.

President.—That is not a very important item. As regards selling expenses there was a big jump in 1932 as compared with previous years.

Mr. Lalkaka.—Yes, because of the increase in quantity.

President.—The quantity was somewhat larger, but it would not account for the whole difference. The jump is more than double as between 1931 and 1932, although the increase in production is about 1,600 tons.

Mr. Lalkaka.—We shall let you have the explanation later.

President.—We have already touched on the question of quota. You have explained that fully.

Mr. Lalkaka.—Yes.

Mr. Rahimtoola.—Suppose there was no quota system, would your cost go up or price go down?

Mr. Lalkaka.—There would be a rate cutting war.

Mr. Rahimtoola.—But the production is very small.

Mr. Lalkaka.—That does not matter. Even 100 tons could spoil the market of 10,000 tons.

Mr. Rahimtoola.—In that case, your realisation would be less.

Mr. Lalkaka.—Exactly.

Mr. Rahimtoola.—What rate of interest have you calculated on working capital?

Mr. Lalkaka.—Our arrangement is that we pay our Bankers 6 per cent. on the drawings and if any amount is lying to our credit, they allow us some interest. The highest rate paid by us is 6 per cent.

Mr. Rahimtoola.—That is so even to-day.

Mr. Lalkaka.—Yes.

President.—The figure for interest on working capital represents the difference between what you receive and what you pay.

Mr. Lalkaka.—We may not borrow from our Bankers and there may be some depositors' money lying with us.

Mr. Rahimtoola.—This is the net amount paid by you.

Mr. Moos.—Yes, after deducting the interest credited to us.

President.—What further reductions in costs do you anticipate?

Mr. Lalkaka.—I am afraid there is no possibility of any further reductions in our costs. As far as Kharaghoda is concerned, I think we have reached the limit in respect of economies. The only economy that could be thought of would be the saving in overheads due to greater output.

President.—One point struck me, having seen the two factories in Kharaghoda you employ much more manual labour than they do at Mithapur. Can there be any economy in that direction?

Mr. Lalkaka.—The reason for that is to be found in the material difference in the lay out of the works—I mean the distance at which the salt works are situated. The motive power which is employed at one salt factory, is non-existent in the other. During the rainy season the Kharaghoda Salt Works is all submerged. We thought of laying a pipe line and putting in pumps but the idea had to be discarded and we came to the conclusion that the method by which we are now bringing the bitterns is the most efficient and the most economical. The cost of the raw material required for the finished product *viz.*, Magnesium Chloride is only 2 annas 6 pies.

President.—At Mithapur they employ about 14 persons as against over 400 in Kharaghoda.

Mr. Lalkaka.—That is because of the greater manual labour required for bringing the bitterns and for its collection at the source.

President.—You do not think that there is any reason to suppose that if protection was continued there would be any material reduction in costs?

Mr. Lalkaka.—Except in regard to the fluctuating prices of packing materials which form a substantial part of our costs. We have reached the limit as far as fuel and other items are concerned and for other production costs, and I do not think there is room for any material reduction.

President.—We will now ask Mr. Vakil about Mithapur. Will your 1937 cost of production figure be comparable with the Kharaghoda figure?

Mr. Vakil.—I should think so. As far as the cost of production goes that will be on a level with Kharaghoda. Our main difficulty is the question of fuel. We have to pay a higher rate than at Kharaghoda.

President.—It is considerably higher. Your cost of fuel works out to Rs. 475 whereas it is only Rs 279 in the case of Kharaghoda. It is almost double the Kharaghoda figure.

Mr. Vakil.—Yes, we have to pay a much higher rate for coal; they can obtain comparatively cheaper wood fuel at Kharaghoda.

President.—But the raw material costs a good deal more than at Kharaghoda.

Mr. Lalkaka.—Because we do not pay any separate royalty there.

President.—The royalty is put separately.

Mr. Lalkaka.—We look upon it as the cost price of the material.

President.—Your packing charges are lower at Mithapur than at Kharaghoda?

Mr. Lalkaka.—Because Mithapur has the advantage of the sea. Then again, we use black sheets at Mithapur against galvanised sheets at Kharaghoda.

President.—Overheads will be debited in the same way as in 1937.

Mr. Lalkaka.—All the overheads go to the factory account except the head office. No separate management charge is made.

President.—That practice will continue this year?

Mr. Vakil.—May I point out that there is a radical difference between the Kharaghoda process of manufacture and the process of manufacture at Mithapur. They have not got to spend anything on the chemical side of the process at Kharaghoda; they are simply boiling their bitterns whereas we have to pass through two or three stages for which we have to pay very heavily, and in spite of that additional cost, we have brought down our cost to about the level of Kharaghoda. Attempts are being made to reduce the cost of fuel.

President.—Do you expect any reduction beyond your 1937 figure?

Mr. Vakil.—Yes, a slight reduction.

President.—What further reductions do you expect?

Mr. Vakil.—If I take the reduction on the basis of quantities of fuel and other materials we shall have about 5 per cent. reduction. But since 1937 the cost of fuel has gone up by about Rs. 6 to Rs. 7 per ton delivered at Mithapur; in terms of quantity of coal or other materials used it will be lower and I do expect that as far as the quantity of raw materials and quantity of fuel are concerned we will certainly be on the better side. As far as labour is concerned we are already doing better than what we were doing last year. Taken all round, if the fuel price had remained the same as last year we would have shown appreciable reduction in the cost.

President.—You say the cost of coal has increased by about Rs. 6 per ton. In connection with the paper enquiry we have had some figures: the increase in the cost delivered at pitsmouth was Rs. 2 to Rs. 3. Why has your cost gone up to Rs. 6?

Mr. Vakil.—Because the sea freight has also gone up.

President.—Are there any other points you would like to bring to the notice of the Tariff Board?

Mr. Lalkaka.—The only question would be about fixing our cost of production and taking the lowest import price on which to base the calculations for determining the amount of protection needed.

President.—Not necessarily the average. Sometimes the lowest price is compared.

Mr. Lalkaka.—Quite so. My contention would be that for comparison sake the lowest Japanese price should be taken. That was the basis on which protection was granted in 1933.

Mr. Rahimtoola.—What period will you take?

Mr. Lalkaka.—We will take the same period.

Mr. Vakil.—To my mind the most potential danger is the likely imports from Palestine, not from other countries. They have in the Dead Sea a reservoir of bitterns very rich for the manufacture of Magnesium Chloride and other salts.

President.—What is the density of the bitterns?

Mr. Vakil.—Almost to the point of saturation and the density varies from month to month according to climatic conditions. But nowhere in the world are conditions such as those in Palestine. The only drawback at present is that their present means of transport is very bad.

President.—They have to transport it from the Dead Sea to the coast?

Mr. Vakil.—Yes.

President.—Is there a railway line?

Mr. Vakil.—A small railway line has been built at Haifa.

Mr. Rahimtoola.—Has any quantity been exported?

Mr. Vakil.—Yes.

Mr. Lalkaka.—It was more to test the market; it was imported at a price slightly higher than the German price. We met a representative of the Sizing Materials Company who are dealing in these chemicals for the textile industry and he was offering it at any price lower than at what we would be selling, *i.e.*, 4 annas or whatever lower price than that offered by the Pioneer Magnesia Works. But as we have pending contracts with most of the mills they have not made any headway but nobody knows what may be in store for us in the future. We find that their exports are increasing and it is only a question of time.

President.—Do I take it that you anticipate greater danger from Palestine than from Japan?

Mr. Vakil.—Yes.

Mr. Lalkaka.—Japan has not got large supplies of salt; she is further an importer of salt and one does not know how she manages to export Magnesium Chloride.

President.—Presumably they must be manufacturing some salt in order to get the bitterns.

Mr. Lalkaka.—They must, but that information is not available to us.

Mr. Rahimtoola.—Do you think the price of Magnesium Chloride will be lower than the price at which the Japanese article is selling at present?

Mr. Vakil.—If they are really putting every item of expenditure in their costs it would be impossible to sell at the price they have been offering at, *viz.*, 5 annas 10 pies which is their works cost including packing; they must be bringing it as bottom cargo. It is a thing beyond our imagination.

Mr. Rahimtoola.—It was so also in the case of the textile enquiry, but the fact remains that they are able to import at this price. The present price of Japanese Magnesium Chloride is the lowest as compared to the price of other foreign products.

Mr. Vakil.—That is the lowest possible.

Mr. Rahimtoola.—Even if competition starts from Palestine you don't think the price can go lower than that?

Mr. Vakil.—We should think so.

President.—We may take that as the lowest possible figure which you have in mind?

Mr. Lalkaka.—Yes. In order to get at the price of the Palestine product I suppose you might take the import price into Great Britain as the criterion.

President.—Have you got Palestine prices?

Mr. Vakil.—May I point out that when I said the most potential danger is Palestine, its product in order to go to England has to pass through the Suez Canal for which they have to pay canal dues which are pretty high. To come to India on the other hand they have not got to pay these dues so that it pays them to send their product to the Indian market rather than send it to England.

Mr. Rahimtoola.—That is why I want to know the lowest limit at which foreign Magnesium Chloride can enter India and compete with the local product.

Mr. Lalkaka.—Quite right.

Local Governments.

(1) *Circular letter No. 62, dated the 12th January, 1938, from the Secretary, Tariff Board, to all Local Governments.*

In connection with the enquiry referred to the Tariff Board by the Government of India, Department of Commerce, in their Resolution No. 199-T. (1)/37, dated the 18th December, 1937, as to the desirability of continuing measures for the protection of the Magnesium Chloride Industry after the 31st March, 1939, I am directed to forward herewith a copy of the questionnaire issued by the Board and to say that if the Government of wish to express their views on any of the questions or on the effect of the protective duties on Magnesium Chloride on textile or other industries, they may be forwarded (with 4 spare copies) to the Secretary to the Board at No. 1, Council House Street, Calcutta, not later than the 7th February, 1938.

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(2) *Letter No. 1420, dated the 5th March, 1938, from the Secretary to the Government of Bengal, Agriculture and Industries Department.*

Subject:—PROTECTION OF THE MAGNESIUM CHLORIDE INDUSTRY.

In continuation of this Department letter No. 839, dated the 12th February, 1938, on the above subject, I am directed to say that the Government of Bengal have no comments to make on any of the questions raised in the questionnaire forwarded with your letter No. 62, dated the 12th January, 1938. As regards the effect of the protective duties on Magnesium Chloride on other industries, this Government are of opinion that any increase in the protective duties is likely to affect the textile industry of the province adversely. I am accordingly to suggest, for the consideration of the Tariff Board, that the existing duties should not be increased on any account but should, on the other hand, be lowered as far as practicable, consistent with the safety of the industry.

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(3) *Letter No. 819, dated the 7th March, 1938, from the Secretary to Government, United Provinces, Industries Department.*

With reference to your letter No. 62, dated January, 12th, 1938, I am directed to say that the manufacture of Magnesium Chloride is not carried on to any appreciable extent in the United Provinces. Its consumption is confined to the textile industry, but its cost is negligible compared to the cost of the textile themselves. In the circumstances the Provincial Government have no views to express on the subject.

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(4) *Letter No. 769-I. & L.-38/4409, dated the 5th February, 1938, from the Secretary to Government, Punjab, Electricity and Industries Departments.*

Subject:—MAGNESIUM CHLORIDE INDUSTRY.

In reply to your letter No. 62, dated the 12th January, 1938, I am directed to state that the Punjab has no direct interest in the Magnesium Chloride industry as this chemical is not being manufactured in the province. Magnesium Chloride is however used in textile mills, in the manufacture of ice and in various medicines. The yearly consumption of Magnesium Chloride in textile mills in the Punjab is approximately 8,000 cwts. Most of the mills use the Indian made chemical, which according to current market rates costs Rs. 3-14 per cwt., against Rs. 5 for the imported one. The textile manufacturers in the Punjab would prefer to use the Indian made Magnesium Chloride so long as it is cheaper than the imported article. However the effect of the protective duties on the textile industry is practically negligible, as the cost of Magnesium Chloride used in cotton sizing is small in relation to the total value of the goods produced.

2. As regards the use of Magnesium Chloride in medicines, the Chemical Examiner to Government, Punjab, is of the opinion that since the superior grade of Magnesium Chloride known as "Reagent" or "Chemically Pure" used for fine analytical work cannot be manufactured in India yet, a tariff should not be levied on this grade of Magnesium Chloride. Though this salt of magnesium is very little used in medicines yet such quantity as is occasionally prescribed must be imported until such time as India can produce a chemically pure Magnesium Chloride.

3. The Punjab Government have no special comments to offer on the questionnaire received with your letter under reply.

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(5) *Letter No. 2479/33-D., dated the 5th February, 1938, from the Secretary to the Government of Bombay, General Department.*

Subject:—INDUSTRY—MAGNESIUM CHLORIDE—PROTECTION TO, ENQUIRY BY THE TARIFF BOARD.

I am directed to refer to your letter No. 62, dated the 12th January, 1938, asking for the views of the Government of Bombay, on the effect on textile and other industries of the protective duties on Magnesium Chloride. In reply I am to point out that the Magnesium Chloride industry is localised in the province of Bombay and the neighbouring States of Dhrangadhra and Baroda. It constitutes one branch of the Chemical industry which is satisfactorily established in Western India, and, this being so, it is likely that by continuing protection an enlargement of the chemical industry in this and other allied branches will result.

2. Magnesium Chloride is an indispensable sizing medium for the preparation of yarn. It is therefore an article essential to the manufacture of cotton textiles, the most important organised industry in this province. Although it may be that on account of Magnesium Chloride forming only a small item in the total cost of cloth production the economic effect on the cost of cloth, if the price of Magnesium Chloride rose, would not be serious, still any increase in the cost of Magnesium Chloride as a result of the withdrawal of protection would very likely have adverse effects on the textile industry owing to the strong competition to which cotton textiles are subjected in the markets of the world.

3. Prior to the Great War India was entirely dependent for its supplies of Magnesium Chloride on Germany, and had not Government, in co-operation with the Pioneer Magnesia Works, encouraged the production of Magnesium Chloride in India, the textile industry here would have been greatly handicapped because of the shortage of essential sizing materials. It is highly desirable that the production of Magnesium Chloride in this country should be helped in all suitable ways so that the industry may not be forced to depend upon foreign supplies and undergo the difficulties it experienced during the Great War. Magnesium Chloride has other commercial uses besides its use as a sizing material and there is reason to believe that with protection the usefulness of the industry for miscellaneous purposes in India will be increased.

4. If the protection that was recommended by the Indian Tariff Board had not been granted in 1931 the production of Magnesium Chloride in India would probably have remained at its original figure of about 2,000 tons per annum. India now consumes nearly 7,000 tons of this chemical annually and produces about 10,000 tons of which three to four thousand are exported to the United Kingdom and other countries. It seems clear, therefore, that this development in the Magnesium Chloride industry was made possible by the protection afforded to it since 1931 and, if this is continued for some time more, there is every prospect of the industry being placed in an unassailable position.

5. For these reasons the Government of Bombay consider that it is most desirable that the Magnesium Chloride industry should continue to receive

protection until it reaches the stage where there is no doubt as to its ability unaided to withstand foreign competition and to supply the present and prospective demand of this country. A note (with four spare copies) in which the importance of the industry to the province of Bombay has been explained is also enclosed.

NOTE.

Magnesium Chloride is one of the indispensable chemicals for our textile industry. Before the war this country was dependent for its supply of Magnesium Chloride on imports from foreign countries but due to the efforts of Pioneer Magnesia Works and the encouragement given to the works by this Department in initial stages of its existence, this country has become now entirely self-contained as far as its Magnesium Chloride requirements are concerned. At present not only this country is self-supporting regarding its requirements but also exports about 2½ to 3 thousand tons of Magnesium Chloride per annum to foreign countries at competitive rates. This situation has been brought about by the protection that has been granted to this industry since 1931 by the Government of India.

2. The protection granted to the industry in 1931 has resulted in the increased production of Magnesium Chloride in this country. At the time when the question of protection was being considered the annual production of Magnesium Chloride in this country amounted to about 2,000 tons by the one plant existing then. Two more plants have come into existence since then and their total production now amounts to about 10,000 tons per year. The biggest plant is that located at Kharaghoda in the Ahmedabad district, producing about half the total Indian production, the other two being located at Port Okha (Baroda State) and at Kuda (Dhrangadra State, Kathiawar). The Pioneer Magnesia Works have now installed at Kharaghoda and Okha by-product recovery plants and are producing Epsom Salts and will soon begin producing Potassium Chloride. They have also made improvements in the process of manufacture and thereby improved the quality the material produced. The Magnesium Chloride produced by the Pioneer Magnesia Works is reported to be equal in quality to the best commercial grade Magnesium Chloride made in other parts of the world. The manufacturers have thus done all they can to deserve continued protection.

3. Formerly the only competitor for this industry was Germany but recently two new countries have come in the field, namely, Japan and Palestine. Due to the large scale operations for the manufacture of Magnesium Chloride carried out in the above-mentioned countries, their cost of production is less than that prevails in this country. In order to kill the Indian industry these countries are reported to have tried to dump their material at very cheap rates in India. In view of these facts and in order to safeguard the interest of the textile industry in the times of War or other emergencies when supplies of Magnesium Chloride cannot be had from foreign countries, it is very necessary that the industry should continue to be protected until it is developed to such an extent that it can withstand all foreign competition.

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(6) *Letter No. S.-9/20-G. B./38, dated the 5th March, 1938, from the Chief Secretary to the Government of Sind.*

Subject:—PROTECTIVE DUTY ON MAGNESIUM CHLORIDE.

I am directed to refer to your letter No. 62, dated the 12th January, 1938, on the subject noted above and to say that as there are no large scale textile or other industries in this Province likely to be affected by the protective duty on Magnesium Chloride, the Sind Government have no observations to make in the matter.

(7) *Letter No. 341-II/38—2, dated the 26th February, 1938, from the Secretary to the Government of Madras, Development Department.*

Subject:—TARIFF BOARD—ENQUIRY—PROTECTION TO MAGNESIUM CHLORIDE INDUSTRY.

With reference to your letter No. 62, dated the 12th January, 1938, I am directed to enclose 4 copies of a note prepared by the Director of Industries, Madras, on the question of protection of the Magnesium Chloride industry and to state that the Government of Madras have no special remarks to offer.

Protection of the Magnesium Chloride industry.

Magnesium Chloride is not manufactured in any of the salt factories in the Madras Presidency. The chief, if not the only, use of Magnesium Chloride in the Madras Presidency is as a sizing material in textile mills. The Director of Industries addressed the 13 weaving mills in this Presidency (including the Central Jail, Coimbatore), requesting them to favour him with their opinion as to the effect of the protective duties on Magnesium Chloride on the textile industry and to supply him with information in regard to their annual consumption of Magnesium Chloride and from what source they obtained it. Replies from eight mills only have been received, but these include the most important of the weaving concerns. The approximate quantity of Magnesium Chloride consumed by the weaving mills from whom replies have been received is about 88 tons so that the total consumption may be taken at about 100 tons per annum. The Sri Kothandaram Mills, Madura, consider that if the duty imposed on Magnesium Chloride was reduced, the cost of the product would fall with the result that the costing of cloth, in the sizing of which Magnesium Chloride forms an ingredient, would diminish and this would be to the advantage of the manufacturers. This mill consumes about five tons of Magnesium Chloride per annum and obtains its supply from Messrs. Kantawala Nanavati & Co., Ltd., Bombay. The Sri Sarada Mills, Ltd., Podanur, consumes about 20 tons of German Magnesium Chloride per annum. The Coimbatore Spinning and Weaving Co., Ltd., state that their annual consumption of the product is about 12 tons, but they give no information as to their source of supply or offer any remarks in regard to the question of protection. The Kaleeswarar Mills, Ltd., Coimbatore, consume about two tons of Magnesium Chloride per annum and obtain their supplies from the Pioneer Magnesia Works, Ltd., Bombay. They state that the Indian Magnesium Chloride is as good as the foreign product and that they have been using "Kharagode" Magnesium Chloride for some time past. The Vasanta Mills, Ltd., Singanallur, consume 10 tons of Magnesium Chloride per annum and obtain their requirements usually from the Pioneer Magnesia Works, Ltd., Bombay. They have no remarks to offer in regard to the question of import duty on the product. The Madras United Spinning and Weaving Mills Co., Ltd., Madras, state that they consume about 16 or 17 tons of Magnesium Chloride per annum. They obtain their requirements from the Pioneer Magnesia Works, Ltd., Kharaghoda and find that the quality is as good as that of the imported product. The Dhanalakshmi Mills, Ltd., Tirupur consume, about seven tons of Magnesium Chloride and obtain their supplies from Germany through Messrs. Havero Trading Co., Ltd., Madras. The Buckingham and Carnatic Co., Ltd., Madras, consume about 15 tons of Magnesium Chloride per annum and their supplies at present originate from the Continent. They have no definite knowledge of the indigenous product and state that they are not in a position to form a definite opinion on the value of the present measure of protection accorded to the industry, although they add that the protective duty has slightly increased the cost of their productions which naturally handicaps them when competing with foreign manufacturers.

2. The Magnesite Syndicate, Ltd., Salem, do not manufacture Magnesium Chloride nor are they associated in any way with any company in

India that does manufacture it. They sell a portion of their magnesite to one or two organisations who use it for magnesia composition floorings in which Magnesium Chloride is used, but they state that they are not sufficiently in touch with the position to offer any opinion which would be of real value in regard to the benefits or otherwise of continuing the present measure of protection.

3. The imports of Magnesium Chloride by sea from foreign countries into the Madras Presidency have been decreasing in recent years as shown below:—

Year.	Rs.
1931-32	10,378
1932-33	6,656
1933-34	3,211
1934-35	2,313
1935-36	2,445

Later figures are not available. The falling off in the imports would appear to indicate that the indigenous product is making headway.

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(8) *Letter No. OA/2, dated the 7th March, 1938, from the Secretary, Tariff Board, to the Collector of Salt Revenue, Bombay.*

In connection with the enquiry into the question of grant of further protection to the Magnesium Chloride Industry in India the Tariff Board requires figures of total production of Magnesium Chloride and other by-products for the last six years in the Bombay Presidency including Native States. I am therefore to request you to be so good as to supply it with the above information at an early date.

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(9) *Letter No. 145—J, dated the 11th March, 1938, from the Collector of Salt Revenue, Bombay.*

Subject:—MAGNESIUM CHLORIDE—FIGURES OF PRODUCTION OF—.

Reference your No. OA/2 of 7th March, 1938.

With reference to your No. cited above I have the honour to subjoin a statement showing figures of the total production of Magnesium Chloride and Magnesium Sulphate manufactured by the Pioneer Magnesia Works in their works at Kharaghoda, District Ahmedabad, during the six financial years from 1931 to 1936:—

Year.	Magnesium chloride. Tons.	Magnesium sulphate. Tons.
1931-32	6,156·2	...
1932-33	5,576·6	...
1933-34	4,569·6	3·5
1934-35	5,917·3	44·1
1935-36	5,440·7	35·6
1936-37	6,553·7	75·5
	34,214·1	158·7

2. I have not got figures of production of Magnesium Chloride and other by-products in the Native States. As far as I know Magnesium Chloride is produced at Kuda (Dhrangadhra) and Mithapur (near Okha).

Director General of Commercial Intelligence and Statistics.

(1) *Letter No. 33, dated the 7th January, 1938, from the Secretary, Tariff Board, to the Director General of Commercial Intelligence and Statistics, Calcutta.*

With reference to the Government of India, Department of Commerce, Resolution No. 199-T. (1)/37, dated the 18th December, 1937, referring to the Tariff Board the question of the continuance of the measures for the protection of the Magnesium Chloride Industry after 31st March, 1939, when the present protective duty expires, I am directed to say that the Board would like to have any information as to the countries which manufacture Magnesium Chloride and the conditions of the industry in those countries. The Board understand that Magnesium Chloride is being exported to the United Kingdom under the preferential duty and they would be glad to have any information about the quality and price of the Indian article as compared with the quality and price of Magnesium Chloride imported from other countries.

2. The Board would be grateful for a reply as early as possible addressed to the Secretary to the Board at No. 1, Council House Street, Calcutta.

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(2) *Letter No. 938-C. I. D., dated the 24th January, 1938, from the Director General of Commercial Intelligence and Statistics, Calcutta.*

MAGNESIUM CHLORIDE INDUSTRY IN FOREIGN COUNTRIES AND ITS PRICE.

With reference to your letter No. 33, dated the 7th January, 1938, on the above subject I have the honour to enclose a note regarding the condition of the Magnesium Chloride Industry in various manufacturing countries and its prices in the United Kingdom market so far as information is available in this office. If the Tariff Board desire further information on the subject I shall be glad to obtain it for them through the Indian Trade Commissioners and His Britannic Majesty's Consular Officers in the countries concerned.

Note on the Magnesium Chloride Industry in foreign countries and its price.

(1) Condition of the industry in foreign countries—

(*a*) *Germany.*—In Germany which is probably the largest manufacturing country of Magnesium Chloride this chemical is produced very cheaply as a by-product in the working of the mineral carnallite of which large deposits exist in Stassfurt. Until the war it was practically a German monopoly but as this source was cut off during the war a new industry for the manufacture of Magnesium Chloride was started in India and probably also in certain other countries.

(*b*) *United States of America.*—Most of the Magnesium Chloride produced in the United States of America is found in natural brines in the vicinity of Midland, Michigan. The remainder is obtained in California from the bittern left after solar evaporation of sea water for recovery of common salt. Although formerly United States of America used to import this chemical from Germany, it is understood that productions in California and Michigan now supply practically the entire home market in the United States of America, which is appreciably less than what it was in 1923.

(*c*) *Hungary.*—This is a limited production of Magnesium Chloride in Hungary.

(*d*) *United Kingdom.*—It is understood that Great Britain draws its supply of Magnesium Chloride for the textile industry mainly from Germany. There is also some production of the chemical locally. The following figures of total imports of magnesium compounds into the United Kingdom and the share of Germany in the trade may be of some interest:—

Import of magnesium compounds into the United Kingdom.

(Separate figures for Magnesium Chloride are not available.)

Year.	Total imports. Tons.	Share of Germany Tons.
1931	26,217	24,544
1932	15,832	14,267
1933	19,365	18,429
1934	22,411	20,749
1935	24,336	21,133

(*e*) *Japan.*—A small quantity of Magnesium Chloride is prepared from bittern as a by-product of the Japanese salt-making industry, but for most purposes for which this chemical might be used (*e.g.*, the dressing of cotton fabrics) bittern is used instead. Imports of Magnesium Chloride are very small.

(*f*) *Palestine.*—Palestine Potash, Ltd., Jerusalem, produce Magnesium Chloride liquors as a residual product which used to be mostly discharged into the sea. It was reported in 1935 that they could produce large quantities if required.

(2) Price in the United Kingdom—

Magnesium Chloride (solid *ex*-wharf) £6-10 per ton (according to the "Chemical Trade Journal and Chemical Engineering", London, dated the 7th December, 1937).

Magnesium Chloride—Scotland, £7-10 per ton (according to the "Chemical Age", London, dated the 18th December, 1937).

No information is available regarding the price of Indian Magnesium Chloride in the United Kingdom. It is, however, stated in the "Chemical Age", London, dated the 8th May, 1937 (page 410), that the Indian Magnesium Chloride is of high grade and has almost completely ousted the imported German product in India.

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(3) *Letter No. 6332-C. I. D., dated the 25th April, 1938, from the Director General of Commercial Intelligence and Statistics, to the Secretary, Tariff Board.*

MAGNESIUM CHLORIDE INDUSTRY IN FOREIGN COUNTRIES AND ITS PRICE.

I have the honour to forward for information a copy of a memorandum regarding the manufacture of Magnesium Chloride in the United States of America which has been prepared by the British Vice-Consul at Philadelphia. An extract from the letter received from the Director of Customs Excise and Trade, Haifa, Palestine, in regard to this industry in that area is also enclosed.

N.B.—No responsibility is accepted as to the financial standing of the firm mentioned.

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138 (3)-C.-38. 10th March, 1938.

THF : MAC

Memorandum.

With reference to the enquiry from the Director General of Commercial Intelligence and Statistics at Calcutta for information regarding the Magnesium Chloride Industry, this office has been informed that the principal producers in this country are the Dow Chemical Company of 919, Jefferson Avenue, Midland, Michigan, and the California Chemical Company of 200, Bush Street, San Francisco, California, who have New York offices in the Chrysler Building.

The former recover Magnesium Chloride from brine wells and are stated to be in a position to supply pure white material, in flake or powdered form, which is found to be of satisfactory quality while the latter obtain an inferior grade from sea water as a by-product of the manufacture of Bromine and Iodine.

It has not been possible to obtain any figures on total output but the statement has been made that consumption in this country is less than 10 per cent. of the possible production by either of the above-named companies as the Magnesite Stucco Industry, which was formerly the largest consumer of the material, is inactive at present and it is now mainly used in connection with the production of composition flooring.

Prices on the Eastern seaboard range from $32·00 per ton of 2,000 lbs. in carload lots to $42·00 per ton packed in 100 lb. bags or 350 lb. drums.

This office has been further informed that Magnesium Chloride is imported from Germany and Messrs. Innis, Speiden & Co. of 117, Liberty Street, New York, have been named as important distributors of such material, while the American Cyanamid and Chemical Corporation, with head office at 30, Rockefeller Plaza, New York, would be interested to receive quotations on flake material of Indian production in five and ten ton lots as they report having purchased a drum of Magnesium Chloride some time ago which was imported from India and has proved satisfactory.

Any communication should be sent to the company at the above address marked for the attention of Mr. J. P. McKenna.

J. HAROLD FOX,
British Vice-Consul.

Extract from letter No. 462/27, dated the 2nd March, 1938, from the Director, Department of Customs Excise and Trade, P. O. B. 541, Haifa, Palestine, to the Director General of Commercial Intelligence and Statistics, Calcutta.

Magnesium Chloride can be produced in any quantity and in any degree of purity required. The prices of the manufactured product can be ascertained only from the London Agents, Messrs. C. Tennant, Sons & Co., Ltd., 9, Mincing Lane, London, E.C. 3.

High Commissioner for India, London.

(1) *Letter No. 24, dated the 6th January, 1938, from the Secretary, Tariff Board, to the High Commissioner for India, London.*

I am directed to state that in their Resolution No. 199-T. (1)/37, dated the 18th December, 1937, (copy enclosed) the Government of India, Department of Commerce, have asked the Tariff Board to enquire into the desirability of continuing measures for the protection of Magnesium Chloride Industry after 31st March, 1939, when the present protective duties expire.

2. The Board would like to have any information as to the countries which manufacture Magnesium Chloride and the conditions of the industry in those countries. The Board understand that Magnesium Chloride is being exported to the United Kingdom under the preferential duty, and they would be glad to have any information about the quality and price of the Indian article as compared with the quality and price of Magnesium Chloride imported from other countries.

3. The Board would be grateful for a reply as early as possible, addressed to the Secretary to the Board at No. 1, Council House Street, Calcutta.

(2) *Letter No. T. 18-31-2, dated the 24th February, 1938, from the High Commissioner for India, Trade Department, to the Secretary, Tariff Board.*

I am directed to acknowledge receipt of your letter No. 24, dated the 6th January, and in reply to forward herewith a note prepared by the Minerals Adviser to the High Commissioner on the subject above-mentioned.

MAGNESIUM CHLORIDE.

Trade figures.—In many cases the figures relating to imports and exports of Magnesium Chloride are not shown separately from other salts of magnesium, such as the Carbonate and Sulphate, and the same applies in certain cases to figures of production. An attempt has been made in the following to estimate the chloride separately.

Raw materials.—The raw materials for the production of Magnesium Chloride are:—

(1) *Natural bitterns*, concentrated solutions of sea water consisting of mixtures of salts of sodium, magnesium, etc., from which Magnesium Chloride is separated by processes of fractional crystallisation.

(2) *Carnallite*, a double Chloride of Potassium and Magnesium of the composition $KClMgCl_2 6H_2O$. In this case Magnesium Chloride is obtained as a by-product of the much more valuable potassium salt.

Uses.—Magnesium Chloride is utilised (1) for sizing cotton fabrics and for this purpose purity of colour and composition are essential, (2) for Sorel's cement, a mixture of Magnesium Chloride and lightly calcined magnesia with a suitable filler such as wood flour, used for flooring, (3) for the preparation of the metal magnesium by electrolysis, extensively used in Germany but in other countries superseded by an Austrian process employing magnesite and carbon.

Principal Producers: Germany.—In this country the preparation of Magnesium Chloride is a subsidiary part of a highly organised industry for the utilisation and exploitation of the varied salts occuring in the salt deposits as Stassfurt. Magnesium Chloride is obtained from *Carnallite* (see above) and of which there are immense reserves, and as the Potassium Chloride obtained at the same time is so much more valuable, there is no doubt that the German product could be sold at almost a nominal price, if necessity arose. Germany has for many years been the principal source of supply for the United Kingdom and other European countries. Exports for the past three years have been 17,186, 16,953 and 14,610 tons respectively of which approximately 5,000 tons were taken by the United Kingdom and amounted to 90 per cent. of the total imports into the country.

United States of America.—Natural bitterns in California and Michigan are used for the production of Magnesium Chloride in the United States of America. Two companies, the Dow Chemical Company and the California Chemical Company are responsible for the whole of the output which is approximately 12,000 tons. During the past ten years the output has increased considerably and the chemical is no longer imported from Germany. It is probable that this is due to decreased utilisation of Sorel cement which was at one time popular in the Eastern States for flooring and internal decoration. The United States of America is not an exporter.

Palestine.—The concentrated solutions of the Dead Sea have been used for some years as a source of potash salts. *Carnallite* separates out as part of the primary deposits in the evaporation pans and used for the preparation of both Magnesium and Potassium Chlorides. So far as attention has been paid to the more valuable potash salts but there is no doubt that Magnesium Chloride could be produced in large quantities.

Other producing countries.—Russia has large deposits of *Carnallite* and the mineral also occurs in Spain. Japan is known to produce from natural bitterns but details of the industry in this and the other countries mentioned are lacking.

Total Trade.—Taking all the published figures of imports, it would seem that the total world trade in Magnesium Chloride is comparatively small, although extremely widespread. Import figures are available from 24 countries and the amount is, for the year 1936, 17,000 tons. It may be noted that India exported 954 tons but imported 675 tons in 1936.

Quality.—There is no question that the German Magnesium Chloride is of the highest quality from the point of view of colour and analysis. The quality of the Indian product is reported to be good, if not quite up to the German standard.

Price.—Quotations for Magnesium Chloride for December, 1937, was £6-10 per ton. No first hand information of the price of Indian Magnesium Chloride is available. The Pioneer Magnesium Works, the only Indian producer, have an agent in the United Kingdom but it is not known what arrangements are made regarding contract sales.

(Sd.) G. H. TIPPER.

10th February, 1938.

Collectors of Customs.

(1) *Letter No. 382, dated the 6th April, 1938, from the Secretary, Tariff Board, to the Collectors of Customs, Calcutta, Bombay, Madras and Karachi.*

In connection with the enquiry into the claims of the Magnesium Chloride Industry for further protection, I am directed to say that the Tariff Board would feel obliged if you could kindly furnish it with information as to the c.i.f. prices of Magnesium Chloride from 1935-36 up to as recent a date as possible, stating the countries to which the prices relate (Germany, Japan, Palestine or France).

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(2) *Letter No. 115, dated the 29th April, 1938, from the Collector of Customs, Calcutta.*

MAGNESIUM CHLORIDE—C.I.F. PRICES OF—.

I have the honour to refer to your letter No. 382, dated the 6th April, 1938.

2. Germany is the principal supplier of Magnesium Chloride to the local market. Small quantities are also imported from the United Kingdom, but shipments from other countries are negligible.

3. The c.i.f. price of solid Magnesium Chloride from Germany remained steady at Rs. 3 per cwt. from January, 1935, to 14th October, 1937, after which there has been an increase to Rs. 3-1-6 per cwt. which rate is still maintained. The c.i.f. price of flake quality has remained constant during this period at Rs. 4-0-6 per cwt. for 138 kilopackings but importation of this quality is rare and the quantities small.

4. The average c.i.f. price of solid Magnesium Chloride imported from the United Kingdom is Rs. 3 per cwt.

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(3) *Letter No. S. 5-28/38-C., dated the 21st April, 1938, from the Collector Customs, Bombay.*

MAGNESIUM CHLORIDE—C.I.F. PRICES OF—.

I have the honour to refer to your letter No. 382, dated the 6th April, 1938, and to state that the prices of Magnesium Chloride from 1935-36 were as under:—

(1) The prices of Magnesium Chloride from Germany during the years 1935-36 and 1936-37 were £4-9 to £4-10 per ton c.i.f., but were

increased to £4-12-9 per ton c.i.f. from November, 1937, as the result of an increase in freight charges.

(2) Imports of Magnesium Chloride from Japan, Palestine and France were restricted to one consignment only from each country of which the prices were as follows:—

Japan—Yens 3·50 per case of 120 lbs. net each and about 40 per cent. freight charges—12 cases imported in December, 1937.

Palestine—£4-10 per ton c.i.f.—A sample consignment of 12 bags—value not shown in invoice, but declared by importers on the basis of German c.i.f. prices.

France—£4-7-6 per ton c.i.f.—Imported in February, 1938.

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(4) *Statement showing the imports of "Magnesium Chloride" into the Madras Presidency and the c.i.f. prices during the three years ending 1937-38, submitted by the Collector of Customs, Madras, in reply to letter No. 382, dated the 6th April, 1938.*

—	Germany.			Japan.			Palestine.			France.
	Cwts.	Rs.	C.i.f. Prices.	Cwts.	Rs.	C.i.f. Prices.	Cwts.	Rs.	C.i.f. Prices.	
			Rs. as.			Rs. as.			Rs. as.	Rs.
Magnesium compounds—Chlorides—										
1935-36 .	357	1,809	4 13	160	636	3 12	..	..	..	..
1936-37 .	784	3,612	4 6	20	75	3 8	19	80	3 15	..
1937-38 .	1,267	5,970	4 8	13	52	3 13	218	1,128	4 15	..

(5) *Copy of letter No. C. 746/38, dated the 26th April, 1938, from the Collector of Customs, Karachi.*

MAGNESIUM CHLORIDE—PRICE OF—.

I have the honour to refer to your letter No. 382, dated the 6th April, 1938.

Imports of Magnesium Chloride at this port are very rare. The average c.i.f. value of this article for the period under reference was about Rs. 3 per cwt.

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(6) *Letter No. 451, dated the 25th April, 1938, from the Secretary, Tariff Board, to the Collector of Customs, Bombay.*

With reference to your letter No. S. 5-28/38-C,, dated the 21st April, 1938, I am directed to say that for the purpose of comparison of prices of Indian and imported Magnesium Chloride delivered at mill Bombay the Tariff Board require information as to the landing charges of the imported article and the charges incurred in transporting to Mills in Bombay if delivery is given free at the Mills. They would be grateful if you could obtain the information from importers as early as possible.

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(7) *Letter No. 5-28/38-C., dated the 27th April, 1938, from the Collector of Customs, Bombay.*

MAGNESIUM CHLORIDE—SELLING PRICE OF—.

I have the honour to refer to your letter No. 451, dated the 25th April, 1938.

2. The average cost of German Magnesium Chloride, inclusive of Customs duty and other charges, is as follows:—

		Rs.	A.	P.	
C.i.f. price £4-12-9 per ton		62	0	0	
Duty on one ton at Rs. 1-5 per cwt. . .		26	4	0	
Dock charges at Rs. 3-6 per ton		3	6	0	
Muccadamús charges and cartage per ton .		1	10	0	
Cartage from importers' godown to mills . .		1	8	0	
		94	12	0	per ton
	or	4	11	10	per cwt.

The average selling price to mills is Rs. 4-14 to Rs. 5 per cwt. (free delivery at the mills).

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(8) *Statement showing the total imports of Magnesium Chloride, during 1935-36, 1936-37 and during the period April, 1937, to February, 1938, supplied by the Collector of Customs, Bombay.*

——	1935-36.		1936-37.		1937-38.	
					(Apl. to Feb.)	
Magnesium Chloride.	Cwt.	Rs.	Cwt.	Rs.	Cwt.	Rs.
United Kingdom . .	..	..	20	287	1	12
Palestine	..	..	..	..	10	30
Germany	6,089	18,701	7,701	23,422	3,644	11,195
Netherlands . . .	..	..	..	..	33	172
Belgium	101	314	..	..	..	..
France	..	..	..	..	200	585
Japan	40	133	..	..	13	43
Total .	6,230	19,148	7,721	23,709	3,901	12,037

Railway Board, New Delhi.

(1) *Letter No. 47, dated the 8th January, 1938, from the Secretary, Tariff Board, to the Secretary, Railway Board, New Delhi.*

In connection with the enquiry into the Magnesium Chloride Industry referred to the Tariff Board under the Government of India, Department of Commerce, Resolution No. 199-T. (1)/37, dated the 18th December, 1937, I am directed to state that the Board would like to have any information you are in a position to give about the suitability of Magnesium Chloride for—

(1) composition flooring,

(2) & (3) basement floors and flooring of railway wagons

with particular reference to the quality and price of the Indian product as compared with the quality and price of the imported article.

2. I am to request you to be so good as to send your reply (with four spare copies) at an early date addressed to the Secretary, Tariff Board, No. 1, Council House Street, Calcutta.

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(2) *Letter No. 38/951/1-S., dated the 4th March, 1938, from the Deputy Director, Railway Board.*

BASEMENT FLOOR AND FLOORING OF RAILWAY CARRIAGES AND WAGONS.

I am directed to forward herewith five copies of letter No. 11817-K./1005, dated the 24th February, 1938, from the Agent, Great Indian Peninsula Railway, and to say that this is the only information available on the subject.

Copy of letter No. 11817-K./1005, dated the 24th February, 1938, from the Agent, Great Indian Peninsula Railway, to the Secretary, Railway Board, New Delhi.

BASEMENT FLOOR AND FLOORING OF RAILWAY CARRIAGES AND WAGONS.

Board's letter No. 38/951/1-S., dated the 2nd February, 1938.

With reference to letter No. 47, dated the 8th January, 1938, from the Secretary, Tariff Board, Poona, a copy of which was forwarded under the Railway Board's letter quoted above, I beg to state that the Mechanical Department of this Railway uses ordinary commercial Magnesium Chloride ($MgCl_2$) dissolved in water and mixed with a proprietory powder having a magnesia base, which mixture forms an oxy-chloride cement. This cement is used for the floors of all suburban coaches, III class bogies, brake-vans, motor vans and parcel vans.

2. The Magnesium Chloride is never used without the proprietary powder referred to above, and that powder causes a chemical action which results in the formation of cement.

3. The Magnesium Chloride crystals are not purchased but are supplied free by the manufacturers of the powder.

4. The present contract for flooring composition is let to Messrs. Heatly and Gresham, Ltd., who state that the Magnesium Chloride crystals supplied by them are of indigenous manufacture.

5. Magnesium Chloride is not used for any other purposes on this Railway. It is, therefore, regretted that the information required by the Tariff Board, with particular reference to the quality and price of the Indian product as compared with the quality and price of the imported article, is not available. It is possible that Messrs. Heatly and Gresham might be willing to supply the Tariff Board with such particulars, if specially requested by that body.

6. I might add that past experience has demonstrated that the cement described above is not suitable for laying upon any form of carbon steel sheets whether galvanised or plain.

Chambers of Commerce and Textile Associations.

(1) *Letter No. 63, dated the 12th January, 1938, from the Secretary, Tariff Board, to all Chambers of Commerce and Textile Associations.*

In connection with the enquiry referred to the Tariff Board by the Government of India, Department of Commerce, in their Resolution No. 199-T. (1)/37, dated the 18th December, 1937, as to the desirability of continuing measures for the protection of the Magnesium Chloride Industry after the 31st March, 1939, I am directed to forward herewith a copy of the questionnaire issued by the Board and to say that if your Association wish to express their views on any of the questions or on the effect of the protective duties on Magnesium Chloride on textile or other industries, they may be forwarded (with 4 spare copies) to the Secretary to the Board at No. 1, Council House Street, Calcutta, not later than the 7th February, 1938.

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(2) *Letter No. 00119, dated the 24th February, 1938, from the Secretary, Indian Chamber of Commerce, Calcutta.*

I am directed to invite reference to your letter No. 63, dated Poona, the 12th January, 1938, forwarding a copy of the questionnaire issued by the Board regarding the desirability of continuing measures for the protection of Magnesium Chloride Industry after the 31st March, 1939. The Committee have carefully gone through the questions set forth in the questionnaire and have to give their views regarding some of them as under:—

The Committee of this Chamber are of opinion that the Magnesium Chloride Industry possesses natural advantages such as abundant supply of raw materials, cheap power, a sufficient supply of labour and also a large home market. Magnesium Chloride is used as a natural softner in the Weaving Industry and taking into consideration the large number of cotton mills in India the market for Magnesium Chloride is bound to be a large one.

The Committee also believe that without the help of protection the indigenous industry is not likely to develop at all or to face competition from fully developed industries in other countries. According to the Committee, if a suitable protection is maintained for the industry for a number of years the industry will eventually be in a position to compete with the industries in other countries. Moreover, in the opinion of the Committee the Magnesium Chloride Industry in India is one in which the advantages of large scale production can be achieved and that increasing output would conduce to increasing economy of production. The Committee do not doubt that in course of time the whole need of the country could be supplied by the home production.

The Committee would further state that economic considerations regarding protection to Magnesium Chloride Industry do not count much and that the industry is of sufficient importance from the view point of the economic development of the country to be granted protection.

Regarding improvement in efficiency of manufacture as judged by reduction in the cost, reduction in losses in the quality, the Committee are of the opinion that if adequate protection is maintained for the industry, the claim for protection would be justified on these grounds in a short time.

The Committee trust that the Tariff Board would give a careful consideration to the suggestions made above.

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(3) *Letter No. G. I./T. B./0437, dated the 22nd March, 1938, from the Honorary Secretary, Marwari Chamber of Commerce, Calcutta.*

With reference to the Government of India's resolution No. 199-T. (1)/37, dated the 18th December, 1937, I am directed to state that the protection granted to India's Magnesium Chloride should be continued in view of the fact that India's annual production of Magnesium Chloride is 10,000 tons and that this is one of the few Indian industries which are able to export their products to foreign countries. In 1931 India was producing about 2,000 to 2,500 tons of Magnesium Chloride but with the aid of protection the annual output has reached 10,000 tons. Magnesium Chloride is now being exported to the United Kingdom, Australia, Holland and Hamburg.

My Committee apprehend that if protection is now withdrawn competing countries will dump their produce on the Indian market at ridiculously low prices and kill the Indian industry. So in the fitness of things the protective duty imposed on imported Magnesium Chloride under the Heavy Chemical Industry (Protection) Act, 1931, should remain in force.

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(4) *Letter No. 449, dated the 10th February, 1938, from the Secretary, Indian Merchants' Chamber, Bombay.*

I beg to acknowledge the receipt of your letter of the 12th January, 1938, No. 63, and to send to you hereby the views of my Committee on the question of protection to the Magnesium Chloride Industry.

Magnesium Chloride is an important and essential ingredient in sizing used for cloth in the textile industry. As has been unfortunately the case with several Indian industries, the cotton textile industry had to depend for its requirements of Magnesium Chloride from outside, in this case from Germany. The World War shattered several illusions and one of the illusions was that a country could depend upon another far off country for some of its essential products required for key industries. The supply of Magnesium Chloride being practically stopped, an industry was started in Kharaghoda by the Pioneer Magnesia Works. They supplied this stuff during the period of the War, after which the supply again began to come freely from Germany, and the local industry was hard hit. In fact in 1925-26, the industry came down to such a position that it was almost obliged to close down. The Pioneer Magnesia Works, however, patiently persevered in their efforts to keep their works going and were ultimately successful when their claim for protection was accepted by the Tariff Board in 1928-29 and protection though of a very limited extent was granted by Government in 1931 of annas 8-9 per cwt.; the industry had to face another competitor in Japan which started sending in 1933 Magnesium Chloride to this country at Rs. 1-7 per cwt. c.i.f. Bombay and other Indian ports. How ridiculously low this price was could be seen from the fact that the steamer freight from Hong Kong and Shanghai to Indian ports at that time was Rs. 2 per cwt., whereas the material was landed here at less than Rs. 1-8. Government gave a further measure of protection in 1934 and this enabled the Magnesium Chloride Industry to withstand the competition from Japan. The protection given in 1929 and 1931 was fixed for a period of seven years, and unless the protection now given is continued the Indian industry may have to go to the wall. My Committee are, at the same time, of the opinion that the industry, if it is given a measure of protection now, may come to a stage when it will not stand in need of any protection. The progress of the industry, with its own efforts and with the help of protection, is really satisfactory. About 2,000 to 2,500 tons were produced in 1931, when protection was originally granted and the production has now gone up to 10,000 tons. It is one of the few industries which are able to export their goods to foreign countries. Magnesium Chloride is now being exported to the United Kingdom, Australia, Holland and other parts of Europe, including Hamburg, which was otherwise the original place from which it was coming to this country. Imports of the article have practically fallen off, and it may be argued that there is no necessity for any protective measures at present. There is a great necessity for circumspection and vigilance in such matters. My Committee apprehend, and the past experience of several industries justifies them in saying so, that if protection is now withdrawn, the competing countries may dump again Magnesium Chloride at a ridiculously low rate, thus kill the local industry and then put up their prices which will be monopoly prices.

Magnesium Chloride, as has been remarked above, is an important ingredient for sizing for the cotton textile mills. It must be pointed out at the same time, that its cost is so very small that the protective measure at present in operations means only $\frac{1}{20}$th of a pie per yard of cloth or ·03 per cent. The cotton textile industry in short itself does not make a grievance of the protection given to the Magnesium Chloride Industry. There is still a large future before the industry. The mill industry itself may develop, while the handloom industry may also take it up in larger and larger quantities. It can be used for purposes other than sizing. Thus, for instance, it can be used for purposes of jointless composite flooring, and for stucco and other building works, for making basement floor and flooring of railway wagons, as also for road repairs.

My Committee feel that the industry has satisfied all the three conditions mentioned in the report of the Indian Fiscal Commission. There is an abundant supply of raw materials, power, sufficient supply of labour and a large home market. The raw material needed is bitterns, which is a waste product of salt, and as salt is produced in India to a very large extent there will never be any scarcity of this raw material. Power and labour are always available at their factories. While with regard to the home market, my Committee have already explained how there is an ever-growing home market for consumption of this article.

With regard to the other two conditions, whether development is possible without protection as is desirable in the interests of the country, my Committee have already pointed out that development is not possible at present without protection, but that if the protection is given the industry will come to a position when it will no longer require protection. In view of all these circumstances, my Committee hope that the Tariff Board will be pleased to recommend that the existing measure of protection of Rs. 1-5 or 25 per cent. *ad valorem*, whichever is higher, should be continued for a further period of seven to ten years.

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(5) *Letter No. A.-I.-I.-1008, dated the 17th February, 1938, from Honorary Secretary, The Association of Indian Industries, Bombay.*

Subject:—TARIFF BOARD ENQUIRY INTO THE MAGNESIUM CHLORIDE INDUSTRY.

My Committee have considered carefully the case for protection submitted by Messrs. The Pioneer Magnesia Works, Ltd., of Bombay, and they strongly support the same. My Committee have been convinced that there is an abundant supply of raw materials, power, sufficient supply of labour and large Home Market and thereby the industry has satisfied all the three conditions mentioned in the Report of the Indian Fiscal Commission.

Now, that the protection of seven years would soon expire in the year 1939, the industry would again be exposed to a cut-throat foreign competition particularly from Germany and Japan. It is absolutely essential, therefore, that a further protection for a reasonable period be granted to the industry to consolidate its position by developing its by-products, etc., thus enabling it to meet Foreign competition, if any, in future.

My Committee beg therefore, to recommend to Government of India, that the existing measure of protection of Rs. 1-5 or 25 per cent. *ad valorem*, whichever is higher, be continued for a further period of seven years.

(6) *Letter No. IL-M (2)/41/38, dated the 28th January, 1938, from the Assistant Secretary, United Provinces Chamber of Commerce, Cawnpore.*

Re CONTINUATION OF PROTECTION TO MAGNESIUM CHLORIDE INDUSTRY.

With reference to your letter No. 63 of the 12th January, 1938, I beg to convey the views of the Committee of the United Provinces Chamber of Commerce as follows:—

The Committee beg to submit that none of the members of the Chamber are interested in Magnesium Chloride Industry. The interest of the Chamber is, therefore, confined only to the consumption of this commodity in Textile Industry. The Committee have ascertained the views of the Textile Mills concerned, and the opinion expressed is to the effect that the cost of Magnesium Chloride is very negligible in the cost of production of textiles. Consequently, the price of Magnesium Chloride does not very much affect the cost of production of cloth in the Province.

Under the protection granted to Magnesium Chloride Industry, the firms which are producing this commodity are believed to be making satisfactory progress, and they might one day be in a position to withstand foreign competition even without the aid of the protective duty. But in view of the fact that foreign competition is still a determining factor regarding the existence of this industry, the Committee are strongly of the opinion that the protection to Magnesium Chloride Industry should be continued at the rates which are found efficatious, after taking into consideration the statistical position of the industry.

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(7) *Letter No. 28/38, dated the 7th February, 1938, from the Secretary, Bengal Millowners' Association, Calcutta.*

Re MAGNESIUM CHLORIDE INDUSTRY.

With reference to your Circular letter No. 63, dated the 12th January, 1938, I am directed by the Committee of the Bengal Millowners' Association to say that the constituents of my Association are consumers of very large quantities of Magnesium Chloride, and, as such, are directly affected by the protective duties on the said article.

While my Committee have full sympathy with all actions on the part of Government to encourage and assist indigenous industries and thus promote the economic welfare of the people, my Committee cannot but feel that the existing duties on Magnesium Chloride, that is to say Rs. 1-5 per cwt. or 25 per cent. *ad valorem*, whichever is higher, are burdensome to the consumers of this very important mill-store. As you are aware, it is the accepted principle of the Government of India that mill-stores should be freed altogether from import duties, and it was only due to abnormal circumstances that a duty of 10 per cent. was levied on them under the emergency budget of September, 1931. It is the considered opinion of my Committee that even the existing duties on this very important item of mill-stores (which is, however, not classified as such in the schedule of import tariff) are much too high, and a further increase, however slight, is bound to react very detrimentally on the cotton textile industry of Bengal, which my Association represents.

My Committee, therefore, submit that the Tariff Board, while considering the question of the desirability of continuing measures for the protection of the Magnesium Chloride Industry after the 31st March, 1939, should on no account concede an increase in the existing duties, but should, on the other hand, see if it is not possible to reduce the same substantially, without of course exposing the indigenous industry to unfair competition from abroad.

My Committee trust that the views expressed herein will receive the best attention of your Board.

(8) *Letter No. 472/53 of 1938, dated the 1st February, 1938, from the Secretary, Millowners' Association, Bombay.*

Subject:—PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

I am directed to acknowledge the receipt of your letter No. 63, dated the 12th January, 1938, and to say in reply that my Committee have no objections to urge against the continuance, at the existing rates, of the protective duties on imported Magnesium Chloride for a reasonable period of time, as a measure of assistance to the indigenous industry.

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(9) *Letter dated the 4th February, 1938, from the Secretary, Millowners' Association, Ahmedabad.*

Subject:—FURTHER PROTECTION TO THE MAGNESIUM CHLORIDE INDUSTRY.

With reference to your letter No. 63, dated the 12th January, 1938, enclosing a questionnaire and inviting the views of my Association on the above subject, I am directed by my Committee to say that as the questionnaire relates only to the manufacturers, they are unable to answer it as such. However, they would like to place before the Board their views generally on the question of further protection to the industry.

As a matter of general principle my Committee are fully in favour of extending the protective duties on Magnesium Chloride, as the same is an indigenous industry. Looking to the progress that it has made since protection was granted in the year 1931-32, it appears that the industry will eventually be able to do without protection. In place of one factory operating in 1929, we have at present three factories working, which coupled with the assistance afforded by protective duties at the rate of Rs. 1-5 per cwt. or 25 per cent. *ad valorem*, whichever is higher, has enabled the industry to cope up with 70 to 80 per cent. of the home demand and also to export to the tune of 2,500 tons annually.

The total cost of the article to the total cost of finished piecegoods is sufficiently low not to materially affect the cost of production of piecegoods in India. The incidence of taxation, consequent upon the imposition of protective duties does not make any appreciable addition to the burden that the Textile Industry is called upon to bear.

To enable the industry, therefore, to develop its resources and to withstand competition from abroad and especially Germany, who can effectively undersell the home product, once protection is taken away, my Committee are of opinion that further protection should at all events be granted to the Magnesium Chloride Industry.

Nevertheless, in arriving at the amount of protection that should be granted, my Committee would like the Board to take into account the fact that the home industry does not have to meet any keen internal competition, like the textile and other industries. As a result of the protective duties, the Indian manufacturers are able to push their sale to the extent of meeting 70 per cent. to 80 per cent. of the present home demand. The industry has still a bright future in the sense that there is further probability of increased consumption in the flooring trade and the handloom weaving industry.

Moreover, the period for which the industry has been already enjoying protection should be considered in fixing the further period of extension. The industry has been having the benefit of protective duties for the last seven years with very bright results as detailed above.

In conclusion, therefore, my Committee urge the Board to extend the protection granted to the Magnesium Chloride Industry, regard being had to the lack of keen competition in the home industry and the protection already granted for a period of seven years.

(10) *Letter No. 256, dated the 7th March, 1938, from the Secretary, Tariff Board, to the Millowners' Associations, Bombay, Ahmedabad, Calcutta.*

I am directed to state that the Tariff Board notes that your Association do not propose to tender any oral evidence in connection with the enquiry into the Magnesium Chloride Industry. I am, however, to point out that in the Appendix to its report of 1929 on the same subject the Board published the attached statements showing the quantities of various chemicals used in the manufacture of certain cloths. I am to say that the Board would be much obliged if your Association will kindly state at an early date whether they consider these estimates to be reasonable in present conditions and if not, in what respects they require modifications.

Statement showing the quantities of various chemicals used in the manufacture of certain cloths.

——	Amount per piece.	Value in pies.	Percentage of cost.	Proposed duty in pies.
	I. (Rs. 5-10-0 per piece.)			
	Oz.			
Magnesium Chloride	1¼	·4621	·0428	·0703
Zinc chloride	¾	1·0125	·0928	·3465
Epsom salts	12	3·6514	·3381	1·6071
Sodium sulphide	6	3·6964	·3422	·9241
Glauber's salts	6	1·1893	·1101	·2411
				3·1891
	= ·2953 per cent. of the sale prices.			
	II. (Rs. 6-8-0 per piece.)			
Magnesium chloride	1½	·4621	·0370	·0703
Zinc chloride	¾	1·0125	·0811	·3465
Epsom salts	8	2·4343	·1951	1·0714
Sodium sulphide	4	2·4643	·1975	·6161
Glauber's salts	7	1·3875	·1112	·2813
				2·3856
	= ·1912 per cent. of the sale prices.			

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(11) *Letter No. 1738/53 of 1938, dated the 7th April, 1938, from the Secretary, Millowners' Association, Bombay.*

I am in receipt of your letter No. 334, dated the 29th March, 1938, and to say that from enquiries made it would appear that the estimates referred to in your letter dated the 7th March, 1938, require correction in the following respects:—

(*a*) The prices of Zinc Chloride and Magnesium Chloride are now up by 25 per cent.

(*b*) The prices of cloth have since gone down by at least 33⅓ per cent.

I regret I have not been able to obtain any reliable information regarding the other chemicals referred to in the estimates.

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